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BETTER FRUIT

VOLUME IX

JUNE, 1915

NUMBER 12

A Few of the Special Features of this Issue

The Fruit and Produce Trade of Chicago
How the Government Makes Crop Estimates
Fruit Grading Rules for the Northwest
Blight Resistance in Pears
Information About Evaporators



South Water Street has been long recognized as one of the most famous fruit and produce centers in the world. The fruit and produce dealers were packed on this street like sardines in a box. The street was so crowded that when the wagons backed up there was a solid string of wagons on each side of the street with not over six inches between the hubs. The above illustration is a picture of the new terminal, which will provide ample facilities for the fruit and produce trade of Chicago, which is exceeded by only one city in the United States, that being New York.



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NEW YORK

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This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.



It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

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While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Blight Resistance in Pears and Pear Stocks

By F. C. Reimer, Southern Oregon Experiment Station, Talent, Oregon.

FOR more than two centuries the pear has been a very popular fruit in this country. At one time it even exceeded the apple in popularity. During the past half century the fruit has usually sold for very profitable prices. In the Northeastern States there is a vast territory well suited to pear culture. In the three Pacific Coast States climatic and soil conditions are almost ideal for the growing of pears. Yet according to the 1910 census the total number of pear trees and the total output of pears amounted to less than one-tenth the number of apple trees and the output of apples.

The question naturally arises, Why is the output of this fruit not greater? It is hardly necessary to answer this question. Every pear grower is well aware of the fact that the pear is very susceptible to pear blight—the most destructive disease known to our deciduous fruits. For considerably more than a century this disease has been a “nightmare” to the pear growers in all of the older fruit regions of this country. In the older pear districts the fight against this disease has been given up by many of the pear growers, and the disease has been the victor. This is due to the fact that this disease usually works rapidly, often persists from year to year, and by its insidious nature baffles the average fruitgrower. The pear industry in the Eastern States has been held in check by this disease. The disease is native to that region and as long as a century ago it began to destroy the pear orchards there. The pear industry had just become well established in the Southern States when this disease made its appearance and practically wiped out the industry. About 1900 pear blight made its appearance in the San Joaquin Valley of California, and its history on the Pacific Coast dates from that time. The only place where this disease has been fought persistently on a large scale is among the pear growers of the Pacific Coast. But even here the fight has been expensive and in some instances not a successful one. Many growers have not appreciated the fact that this disease must be fought promptly, persistently and thoroughly. For example, in the San Joaquin Valley the disease practically wiped out a magnificent pear industry in two years.

The question naturally arises, Shall we keep up the present fight against blight? The reply is yes. The small total output of pears will certainly insure excellent prices. It is also certain that the Pacific Coast, because of its

suitable climate, will be the home of the pear industry in this country. If it will pay to keep up the present costly fight against pear blight anywhere it will certainly do so here. It is well known that the only successful method ever devised for combating blight is that of cutting out all the affected parts and disinfecting the wounds, but this should not deter us from improving the method nor from trying to find a better one. The science of plant pathology is a comparatively new one, and we are still in our infancy so far as methods of fighting plant diseases are

will be found which will be comparatively free from blight and still be desirable commercial varieties? To show that this is possible, it is only necessary to state that we already have varieties which are known to approximate this ideal. The Lucy Duke, a seedling of the Bartlett, which has been in cultivation for more than thirty-five years, has shown marked resistance to pear blight. This is a pear of excellent quality and promises to be of commercial value. Another promising variety is the Douglass, which originated as a seedling of Kieffer, probably crossed with the Angoulene. This variety has been growing in Central Kansas, in a region where blight is very severe, for fourteen years, but has never shown a trace of blight. It is not among the best in quality, but it is markedly better than the Kieffer, and apparently far more resistant to blight.

We have several varieties of poor quality but remarkably resistant to blight. A variety locally known as the Florida Sand Pear, and which belongs to the Chinese Sand Pear group, has been grown in the Southeastern States for more than thirty years, under the severest possible conditions; with badly blighted trees of other varieties in adjoining rows, this variety has never shown a trace of blight. The Burkett is a variety which has been grown in the Upper Mississippi Valley for the past fifty years, and there under conditions where very few of our varieties can be grown because of the severity of blight, this variety has proved practically free from this disease. The Surprise is another variety from the Middle West, where under the severest conditions it has never shown a trace of blight. Other varieties showing resistance are Krull, Fluke and Orel No. 15. Other examples might be given, but these will suffice to illustrate the principle that it is possible to grow pears which will be measurably resistant to blight. Recently a seedling pear in Washington has come to the attention of the writer, which is a late pear similar to the Anjou in appearance and fully equal, if not superior to it in quality; a late bloomer and productive. Up to the present time this seedling has proved entirely free from blight, but it is possible that it has never been exposed to the disease. If this variety should prove reasonably resistant to blight, it would mean a great advance in the pear industry. We are now testing at our Experiment Station hundreds of varieties of pears from this country and Europe, and it is hoped that we

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BLIGHT RESISTANCE IN PEARS AND PEAR STOCKS

THE END OF SOUTH WATER STREET

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NORTHWEST GRADING RULES SEASON 1915

concerned. Hence the work of improving our present method, or finding a new and better one, should be pushed vigorously by our plant pathologists.

Every pear grower will readily admit that the ideal method of combating pear blight would be to grow varieties which would naturally be resistant to the disease. The writer wishes to state emphatically that the ultimate solution of the pear blight problem will be in growing such resistant varieties. Can such varieties be found or produced? It is a fact, well known to fruitgrowers, that some varieties of pears suffer much less than others from blight. Comice and Anjou are much more resistant than Bartlett and Howell. The pear industry in the South and some sections of the East is dependent on the Kieffer because it is more resistant to blight than our better varieties. There are in cultivation at the present time more than two thousand varieties of pears. Of this number comparatively few varieties have been thoroughly tested to determine their resistance to pear blight. Is it not possible that among this host of varieties some

will find among these desirable commercial varieties which will not be seriously affected by blight.

The production of blight-resistant varieties of pears offers a splendid field for horticultural work, which up to the present time has received too little attention. The writer is very thoroughly convinced that desirable blight-resistant varieties can be produced by breeding. For example, by crossing such high-quality varieties as Bosc or Anjou with such blight-resistant varieties as Surprise or Burkett, and then growing thousands of seedlings from these crosses it will be possible to originate a variety which will possess high quality as well as blight resistance. That this is possible has been repeatedly demonstrated with other fruits and plants. In this connection it should be emphasized that high quality and susceptibility to blight are not necessarily correlated. For example, the Seckel, a pear of very high quality, shows much greater resistance to blight than most of the low-quality pears.

One of the most promising lines of work and one which offers perhaps the most immediate results is that of growing our commercial varieties on root systems and trunks which are resistant to blight. It is well known that the greatest injury of blight, at least on the Pacific Coast, is inflicted on the root system, trunk and body branches. Here the disease performs its most fatal work; and here it is by all odds the most difficult to combat. The French seedling, on which most of our older pear orchards were budded or grafted, is very susceptible to blight. It is often more susceptible to the disease than many of our cultivated varieties; and this is responsible for the large amount of pear blight in the roots in our older orchards. We now have available an abundance of the Japan pear stock (*Pyrus sinensis*), which is far more resistant to blight than the French pear stock (*Pyrus communis*). Where root blight is as severe as it is here on the Pacific Coast the French pear stock should not be used. Local nurserymen are giving this matter serious consideration and are now propagating most of their trees on the Japan stock. It must be stated that the Japan pear stock has not been so extensively tested in this country as the French stock. Hence we do not know its shortcomings so well. It is possible that for some varieties and on some soils this stock may not prove all that could be desired. But one thing is certain, we cannot afford to continue to use the French stock. In this connection it must be said that we may find other stocks for pears superior to either the French or the Japan stock. All of the French stocks belong to one species, *Pyrus communis*; and the Japan stock belongs to another species, *Pyrus sinensis*. These two species grow wild in their respective countries and have come into extensive use because they are abundant and conveniently obtained. At least twenty other

wild species of pears have been found in Europe and Asia. In China one of these (*Pyrus betulaeifolia*) has been successfully used as a stock for their cultivated varieties for many years. This grows readily from cuttings, is a very vigorous grower, and in China is giving excellent results as a stock. Since pear blight has never become prevalent in Europe or Asia we know little regarding the susceptibility or resistance of these species to blight. The Southern Oregon Experiment Station is growing these species to determine their behavior toward blight and their value as stocks for our cultivated varieties. It is possible that we may find in this large collection stocks for our pears which are superior to those now used.

I have already stated that we now have varieties of pears which are rarely, and some never, attacked by blight. The fruit of most of these has little commercial value, but the trees are of the greatest value. We should plant these blight-resistant varieties (on Japan pear stock), grow them in the orchard for two years and then top-work them with our commercial varieties. By doing this it will be possible to keep blight out of the root system, trunk and the main body branches, and by this method we can avoid at least fifty per cent of the injury now inflicted. This will increase the cost of the tree, but the increase will be slight and is not worth considering when compared with the present cost of fighting blight in the trunk and root system. During the past three or four years the Kieffer has been quite extensively used in the West for this purpose. Up to the present time our commercial varieties have made a satisfactory growth on the Kieffer. In the Eastern States this variety has not proved very satisfactory when top-worked with our standard commercial varieties. The scions would usually grow fairly well for a few years, and then most of them would either die or break off at the union. Most of the Kieffers top-worked in the Eastern States were trees old enough to bear, and consequently the grafts were inserted where large branches had been cut off; and under such conditions the union may be much weaker than where the top-working is done by budding into small branches. The writer has observed here in the West that top-grafted Kieffers, even on small branches, will often form a rough, swollen union, while top-budded trees usually have much smoother unions. It is well known that the Kieffer is a hybrid between two very distinct species, and this variety is markedly different from our cultivated European varieties of pears. This is probably responsible for so many weak unions.

We now have varieties which undoubtedly are far superior to the Kieffer as stocks for top-working with our commercial varieties. These varieties are Surprise, Burkett, Krull, Fluke and Orel No. 15. All of these belong to the species *Pyrus communis*, to which

all our commercial varieties on the Pacific Coast belong. For this reason they will make a far better union with these varieties when top-worked than will the Kieffer. Unfortunately trees of these varieties cannot be purchased in large quantities at the present time. We have these varieties growing at the Southern Oregon Experiment Station, and have already interested some of our nurserymen in them. They should have a supply of these for sale in two or three years. In conclusion permit me to say that the pear-blight problem overshadows all other problems connected with pear culture. That this problem will ultimately be solved is beyond the shadow of a doubt.

Apple Exports Were 359 Cars

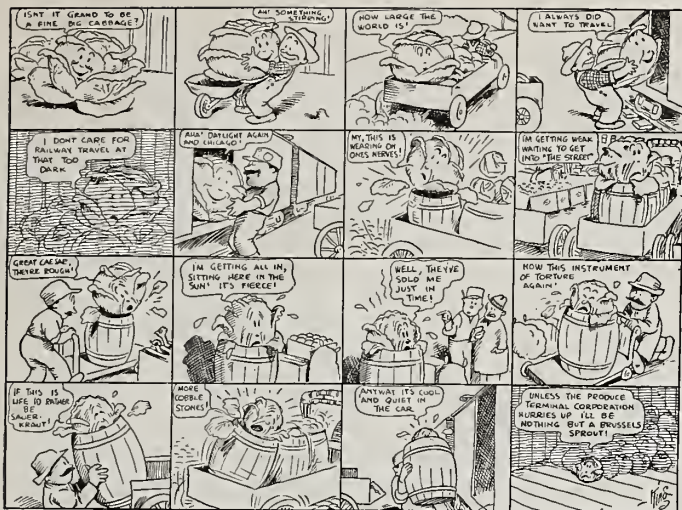
Washington exported 359 carloads of apples through the North Pacific Fruit Distributors in 1914, according to figures being compiled by that organization to be used in tables in the Washington building at the Panama-Pacific Exposition. The organization's total exports were approximately 600 cars.

The figures call attention to the fact that the export business of the Distributors is not all confined to the Hood River district. The Washington figures show a wide range of varieties exported, exclusive of Yellow Newtowns and Spitzenbergs, which constitute the bulk of the Hood River exports. The Washington apples went to the following foreign cities in the following number of carloads:

Liverpool	65
London	53
Hull	41
Bristol	10
Manchester	6
Glasgow	35
Cardiff	5
Swansea	5
Rotterdam	41
Copenhagen	67
Stockholm	2
Honolulu	5
Manila	22
Buenos Aires	2

The above figures do not include any of the exports by the other agencies. One of the heaviest shippers from Wenatchee was E. Wagner. But using the above figures as something of a criterion, it is probable that the foreign shipments during the past year from all sources ran over 1,000 cars.

A new market in South America is open for potato growers of United States. The Department of Agriculture is making investigations with a view to building up a good trade with South America on our potatoes. Particular care is called to the attention in preparing potatoes for South America shipments—First, all bruised or damaged potatoes should be thrown out; second, frosted potatoes should be excluded; third, no potatoes that show any dry rot or late blight should be shipped; fourth, the barrels should be ventilated by cutting a liberal number of holes in their sides; fifth, shippers should insist that potatoes be stowed in a cool, well ventilated part of the vessel.



The End of South Water Street

By Arnold Joerns.

EVER heard of South Water Street? Of course you have. Every grower everywhere knows the name of that old thoroughfare as intimately as the German knows "Unter den Linden," the Englishman "Piccadilly" and the American banker "Wall Street." South Water Street needs no city name appended to give it a location. It is better known to growers than Chicago itself. Indeed, I once heard a prominent Oregon grower say, "Chicago? Yes, it's near South Water Street."

If not the largest, South Water Street is undisputedly the second largest produce market in the world. Here in about two city blocks over \$300,000,000 worth of farm produce is sold annually. This consist chiefly of citrus and deciduous fruits, vegetables, poultry, veal, fish, cheese, butter, eggs and hay. And now, after all this accumulation of reputation, South Water Street is going to move! What is more, it will leave its name behind. South Water Street as a produce market will be but a memory. The grower will tell his grandchildren stories of the old street that sometimes feathered his bank account, and sometimes thieved it. The stories will mark the advance of ethics in business as surely as they will blaspheme practices of the rawest robberies. While most of South Water Street's merchants have been gentlemen of honor, others, like wolves in lamb's clothing, have deceived and stolen with a cunning assurance that laws may be broken without danger.

But now, in perhaps a year, when you come to Chicago to look at this world-famous thoroughfare, you will find—goodness knows what! Perhaps a wide elm-edged boulevard skirting the historical Chicago River,—perhaps a street of sky-scraping office buildings. One thing is certain, the great produce market will not be there. The fact of the matter is South Water Street has worse than outgrown its clothes. It has outworn them. It has darned its

facilities till the darning period developed into almost justifiable damning.

South Water Street had no railway facilities. Think of it! All this produce had to be teamed and trucked across Chicago's congested business "loop," from various scattered railway terminals, to the market. This delaying and expensive method of handling perishable produce drew from the fertile brain of Mr. King, the cartoonist of the Chicago Tribune, the accompanying two masterly cartoons. The first shows the South Water Street produce merchant "busting" himself trying to do business under the old conditions. The second is the sad life story of an innocent cabbage that was sent to South Water Street.

The new location of South Water Street is on 39th Street, between Ashland Avenue and Western Avenue. Though a good three miles south of old South Water Street, the new site is

within four blocks of the center of Chicago, both in point of distance and population. The dominating features of this location are, first, that one hundred acres of land are available here and are already purchased for the purpose; second, that this site adjoins the great Ashland Avenue yards of the Chicago Junction Railway; and, third, that it is also on the Chicago River. This is the one point in all Chicago to which all railroads can directly bring produce and from which all railroads can directly take produce under their own power. So now Chicago's produce market will pass from the intolerable South Water Street condition of no railroads to the perfect 39th Street condition of being literally on every railroad entering Chicago. These railroad yards are already built with a capacity today of 8,000 cars. As soon as required, the capacity will be increased to 10,000 cars.



Old South Water Street, Chicago, today, where \$300,000,000 produce business is conducted annually.

The buildings of the new Produce Terminal will be models of efficiency and sanitation. It is estimated the cost represents \$20,000,000. The picture shown here of the new terminal will only convey the correct idea of its immensity when you consider that the length from east to west is one solid mile.

No more will the cabbage from Iowa or the apple from Oregon be subjected to the bumpety-bump joy-ride through Chicago's cobblestone streets in all weathers. The new terminal will have a giant eight-story cold-storage plant, the first two floors of which will be a union freight station. Into this building freight will come under the power of the choo-choo. It will be immediately unloaded into storage or onto an electric train that will whisk it into the produce merchant's store without it ever leaving shelter. Carlot shipments will have a sheltered yard accessible to all railroads, where shipments from all points can be promptly inspected, sold and reshipped without deteriorating delays, weather perils or switching difficulties. There will be a team track with a capacity of 1500 cars for the efficient sale at wholesale, direct from the cars.

The wagon-shipping station has an area of 39,160 square feet. The Produce Sales and Display Building an area of 240,000 square feet. The Union Auction and Storage Building for Fruits an area of 280,000 square feet, with space inside for 90 cars.

Dishonest practices, as I referred to at the beginning of this article, will be

well-nigh impossible in the new terminal. A Produce Exchange of responsible commission men will sit in judgment on sharp practices, with the power to impose drastic penalties on the impostors. This guarantee of the square deal will not alone put out of business the few dishonest commission men that still exist, but it will also close the market to the dishonest shipper. Yes, shippers have been known to be dishonest, too. More than one honest commission man has found a layer of gravel or sand in the middle of a barrel of potatoes. But these instances are rare, and I dare say no instances are known where "Growers' Associations" have not been entirely "on the level."

Why is the removal of South Water Street to 39th Street so interesting to the grower? Because, fundamentally, this terminal belongs to the grower. The commission man is merely the grower's hired salesman. Growers leave their work half done when they ignore the efficiency of their selling system. Selling the fruits of his toil is as important as growing them. The growers' profits do not depend alone on the garden he waters, with the sweat of his brow; not alone on the back he bends in the heat of the sun. His profits depend very largely on his sales. His sales depend largely on his market, and the quick attention his produce receives when it reaches its destination. The new facilities of the Chicago market will be unprecedented. They will make Chicago your best market.

She: "We women have to stand a lot." He: "Not in the street car if you are pretty."—Boston Transcript.

* *

"Pop, where are the man-hunting tribes to be found?" "Principally in leap year, sonny."—Madison Journal.

* *

Timid Youth: "What do I have to pay for a marriage license?" Facetious Clerk: "Well, you get it on the installment plan." Timid Youth: "How's that?" Facetious Clerk: "Two dollars down and most of your salary each week for the rest of your life."—Kansas City Star.

The Question of Overproduction

Even in as fine an industry as the orchard industry it is worth while to look ahead occasionally and see where we are going; whether we are coming to a point where there is to be overproduction. If there is any danger of coming to that there is certainly nothing more vital for us to consider. We have heard, on our side of the line at least, a lot of talk from various men in whose judgment we had every confidence, that we were approaching a point where there is bound to be overproduction.

While statistics are dry things, it is worth while to consider a few. The report of the Trade and Commerce Department at Ottawa, on the 31st March, 1914, shows that the average shipments of apples from Canada to Great Britain and to the United States and other countries, for the ten years from 1893 to 1902, were something over 800,000 barrels, and the average shipment the next ten years, 1,200,000 barrels; that is, there was a 50 per cent increase in shipments. The last United States census shows that there were 65,000,000 trees in the United States at that time not yet in bearing. These are big figures, and probably we do not take them in, but they present a serious side to the question of overproduction. You will also find present-day plantings are on the average in the hands of much better men than the old plantings were; the work is better handled.

Let us look now at the other side of the question. We had in the United States 50,000,000 less bearing trees at the last census than we had ten years previous. And by the time the 65,000,000 apple trees mentioned before come to bearing, we will probably have lost enough more so that we will not be at all ahead of what we were when the census was taken. Add to this that while this change was going on in the yield the population of the United States had increased from 76,000,000 to 92,000,000, an increase of about 21 per cent, and you have a situation that looks a good deal brighter. Besides this, the people are spending more money, spending it more freely than they used to. There is a good deal more increase than 21 per cent in their buying power. When we narrow it down the situation is not so discouraging.—Professor F. C. Sears, Amherst, Massachusetts.

Read the Jokes and Forget 1914 Apple Prices

"A little nonsense now and then,
Is relished by the best of men."

* *

"She talks like a book." "Yes, the volume of her speech is truly wonderful."—Topeka Journal.

* *

Little Sister: "A widow? What's a widow?" Big Sister: "A lady what's had a husband and is goin' to have another."—Life.

* *

Lawyer: "So you want to make a case of it?" Farmer: "Yes, by jing! I offered to settle by fair means, an' he wouldn't. So I decided I'd hire a lawyer an' have him took into court."—Livingston Lance.

* *

Mistress: "Bridget, did I see Officer Flynn eating cold chicken in the kitchen last night?" Bridget: "You did, mum! And it's not me will heat up a chicken at half-past tin for any cop!"—Puck.

Mazie: "Artie, where are we going on our honeymoon?" Artie: "Around the world, darling. They're going to give it in seven reels at the corner picture show."—New York Globe.

* *

Burton: "Mean man, isn't he?" Robinson: "Mean! He's capable of going into a barber shop for a shave and then getting his hair cut just to keep other people waiting."—Boston Globe.

* *

Smith: "Packers say that meat animals can't catch up with the consumer." Jones: "Ever have a bull chase you?"—New York Sun.

* *

Mrs. Homespun: "What'll we contribute to the minister's donation party?" Farmer Homespun: "Wal, I dunno, Hannar! Taters is 'way up, pork is 'way up, fowl is 'way up—we'll save money by giving him money."—St. Paul Dispatch.

* *

"How's the baby?" asked the neighbor of the new father. "Fine," said the proud parent. "Don't you find that a baby brightens up a household wonderfully?" pursued the friend. "Yes," said the parent, with a sigh; "we have the gas going most of the night now."—New York Globe.

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Prince Albert tobacco is the real joy smoke!



Here is another just-elected member of the Prince Albert "old-time jimmy-pipers club." This is John O'Reilly, of East Providence, R. I., who has just passed the century mark. Mr. O'Reilly is one of those grand old men who has come to this ripe age with the joys of his friendly jimmy pipe fresh in his mind each morning. He has always been a liberal smoker.

Just as soon as you smoke some Prince Albert tobacco in a pipe or cigarette, just that soon you'll understand how different it is in flavor, in aroma and in genuine goodness. No other tobacco can be like Prince Albert. The patented process fixes that—and removes the bite and parch!

You come on and get pipe or cigarette makin's happy. Know yourself what it's like to smoke all the tobacco you want, and smoke as long as you want without even tingling your tongue!

PRINCE ALBERT

the national joy smoke

just makes it possible for every man to renew his love for his friendly old pipe, or to get a new idea how good a hand-rolled cigarette can be. You've no idea of the satisfaction, content and restfulness that's yours if you'll get chummy with P. A. Lose no time in getting acquainted with this real and true man-tobacco!

Buy Prince Albert everywhere tobacco is sold. Tippy red bags (handy for cigarette smokers), 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and—that classy pound crystal-glass humidor with the sponge-moistener top that keeps P. A. fit as a fiddle!

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WINSTON-SALEM, N. C.



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Control of the Tent Caterpillar

THE conspicuous, unsightly nests or tents of the apple-tree tent caterpillar are familiar objects in the spring in trees along roadways, streams and fences, in neglected orchards and elsewhere. These gregarious caterpillars construct the tents for their protection, and these, at first small, are gradually enlarged often to a foot or more in height and diameter, the size varying with the number of individuals in the colony. The caterpillars feed upon the foliage of the trees, stripping the leaves from the limbs adjacent to the nest, and if there be several colonies in a tree, as is frequently the case during periods of abundance, the foliage may be quite destroyed, leaving the branches as bare as in midwinter. Species of the tent caterpillar are found quite generally over the entire United States. The moths deposit their eggs by early midsummer, or earlier in the South. By fall the embryonic larvæ is practically full grown within the egg, where it remains until the following spring. With the coming of a warm spell the larvæ escape by gnawing through their egg-shells, often before there is foliage out for food, and under these circumstances they may feed upon the glutinous covering of the egg mass.

The tent caterpillar feeds principally on wild cherry and apple trees, but will attack many other plants, and where such trees can be removed without disadvantage this should be done, thus lessening its food supply. During the dormant period of trees, when the leaves are off, the egg masses are fairly conspicuous, and with a little practice may be readily found; it is then that they should be cut off and burned. Trees infested with larvæ during the early part of the year, or those in the immediate vicinity, are perhaps more likely to be chosen by the parent moth for the deposition of her eggs, and such trees at least should be searched if it is not practicable to extend the work to the orchard as a whole. This work may be combined with pruning to good advantage, and a lookout should be kept not only for the eggs of this insect but for the eggs and

cocoons of other injurious species which pass the winter on the trees. When two egg masses are deposited close together, the resulting caterpillars may form a common nest. These nests are gradually enlarged and soon furnish ample protection. If the caterpillars are destroyed as soon as the small nests are detected, this will prevent further defoliation of the trees, and the rule should be adopted to destroy them promptly as soon as discovered. In this work either of two practices may be adopted, namely, destruction by hand or with a torch. When in convenient reach, the nests may be torn out with a brush, with gloved hand or otherwise, and the larvæ crushed on the ground, care being taken to destroy any caterpillars which may have remained on the tree. The use of a torch to burn out the nests will often be found convenient, especially when the nests are located in the higher parts of the tree. An asbestos torch, such as is advertised by seedsmen, will be satisfactory, or one may be made simply by tying rags to the end of a pole. The asbestos or rags are saturated with kerosene and lighted and the caterpillars as far as possible cremated. Some caterpillars, however, are likely to escape, falling from the nest upon the application of the torch. In using the torch great care is necessary that no important injury be done the tree; it should not be used in burning out nests except in the smaller branches and twigs, the killing of which would be of no special importance. Nests in the larger limbs should be destroyed by hand, as the use of the torch may kill the bark, resulting in permanent injury.

Tent caterpillars are readily destroyed by arsenicals sprayed on the foliage of trees infested by them. Any of the arsenical insecticides may be used, as paris green, Scheeles green, arsenate of lead, etc. The first two are used at the rate of half pound to fifty gallons of water. Milk of lime, from two to three pounds of stone lime should be added to neutralize any caustic effect of the arsenical on the foliage. Arsenate of lead is used at the

rate of two pounds to each fifty gallons of water. Even in the small home orchard of a dozen or more trees it will be found highly profitable to adopt a system of spraying which will control not only tent caterpillars but such serious pests as the codling moth, cankerworms, various bud and leaf-feeding insects, and which will greatly reduce injury from the curculio. On stone fruits, such as cherry, peach and plum, arsenicals are likely to cause injury to foliage and must be used with caution if at all. On such trees the arsenate of lead is preferable, as it is less injurious to foliage, and on all trees sticks much better. In spraying for the tent caterpillar only, applications should be made while the caterpillars are yet small, as these succumb more quickly to poisons than those more nearly full grown, and prompt treatment stops further defoliation of the trees.

A Model Cannery

One of the most interesting of all practical exhibits in the Palace of Horticulture at the Panama-Pacific International Exposition is the operation of the model cannery under the direction of Dr. A. W. Bitting, food technologist, and Mrs. A. W. Bitting, bacteriologist, both of Washington, D. C., and representing the National Canners' Association. The exhibit is impersonal in that no brands are represented, the exhibit being designed rather to instruct the public in the methods employed by all up-to-date canneries in preparing and packing foods for preservation. The exhibit demonstrates every process entailed in the canning of fruits, vegetables, fish and soups, and every detail is shown from the washing of the raw commodity to the ultimate packing of the can.

Here the visitor will see, being prepared for canning, fish far fresher than ordinarily found in the markets. The washing is done by a special apparatus between sprays of water exerting a pressure of one hundred pounds to the square inch. From the washing appliance the raw material goes to the preparation table or machine under the constant cleansing play of fresh running water. Syrups, brine or other additions are made in every case by machinery. From first to last human

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hands never touch the material. The cans are filled, sealed, cooked, weighed, labeled and boxed entirely by ingenious machinery that defies a human equal for efficiency or sanitation. As an instance of the wonderful cautions taken in the better class canneries these days, the demonstration shows how temperature controllers and tuning devices automatically regulate the cooking, insuring uniformity regardless of how many thousands of cans may be involved.

In connection with the cannery is a laboratory for the scientific testing of all products. Both chemical and bacteriological tests are made, the double check being necessary to assure both sterility and uniformity of quality in the factory's output. This laboratory is to be used also for continuing research of the exhibiting association during the continuance of the exposition. The basic purpose of this demonstration is to combat the lingering prejudice against commercial canned goods by showing how, in reality, a great cannery, equipped with all that the last word in science has brought forth for sanitation and efficiency, can turn out a product invincibly superior to the "home-canned" goods.

Will Exhibit at Exposition

Arrangements and plans are now completed for an elaborate display of the hydraulic machinery products manufactured by The Hydraulic Press Manufacturing Company, Mount Gilead, Ohio, at the Panama-Pacific International Exposition at San Francisco. The exhibit is being installed in block 11 in the Palace of Machinery. The space to be occupied is 27 feet wide and 67 feet long. The exhibit will be in charge of the company's Pacific Coast representatives, The Berger & Carter Co., 1045 Seventeenth Street, San Francisco. A practical hydraulic expert will be in attendance at all times to operate the machinery and explain

the various features which characterize the hydraulic equipment manufactured by this company.

The following machinery will be exhibited and operated: A 150-ton hydraulic cider, grape juice, wine or tankage press; hydraulic cider, wine or grape juice press, 80 to 100 barrels capacity; hydraulic cider, wine or grape juice press, 30 to 40 barrels capacity; hydraulic Talbert cider mill; Crawford filter, 3½ feet in diameter; 550-ton hydraulic olive oil press; 500-ton 30x40-inch hydraulic curb scrap press; hydraulic triplex pump, motor driven for high-pressure purposes; hydraulic steam pump for high-pressure purposes; pressure and speed regulator for hydraulic steam pump; hydraulic valves for high-pressure purposes; 150-ton hydraulic wheel press; 75-ton hydraulic bar-straightening press; 30-ton hydraulic pipe bender; 15-ton hydraulic broaching press. Special foundations are being built in the space mentioned to support the heaviest of the hydraulic machinery which is to be exhibited. Complete hydraulic installations will be the feature of this exhibit.

Need No Protection

Rarely do experiments in agriculture disprove commonly accepted beliefs; but this has been the result from a four-year investigation at this station on the effect of various protective materials on the wounds of fruit trees due to pruning. Though many materials were used in the test none was found to be of benefit; for in every case untreated wounds made as good recovery as those covered. In nearly all instances the supposedly helpful covering injured the exposed tissues and retarded healing; the mechanical exclusion of the germs of plant diseases by impervious coverings and the destruction of these germs by preservatives and disinfectants proved without value, while wounds kept from drying out by some protective material healed no more rapidly than those left open to the air.

Paints made from white lead, white zinc and yellow ochre were used in the test, as well as coal tar and avenarius carbolinum, which are preservatives and disinfectants, and shellac, which forms an impervious coating over the wounds. In different tests extending over four years these materials were applied, both immediately following pruning and after a delay of six weeks to allow some drying of the surface, to considerable numbers of large and small wounds of young and old apple trees pruned in the winter and in the spring; and the action of the same materials on the smaller wounds of winter-pruned peach trees was under observation for three years.

In no case was there benefit from the use of any of the coverings. On peach all were so harmful that it may be safely said no covering should ever be used on trees of this or, presumably, of any stone fruit. The injury from

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Beat all others for fine, fast work and small power consumption. Largest size machine will turn out 4 to 6 tons per hour with 10 h. p. engine. Mechanically excellent. Like all CASE machinery, they are built to produce results.

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shellac was only slight. On the apple the avenarius carbolinum was very harmful, the yellow ochre paint retarded healing noticeably and destroyed some tissue, the white lead and white zinc were less injurious and the shellac did little or no harm but no good.


The series of careful, long-continued comparisons and observations indicates unmistakably that pruning wounds on peaches and other stone fruits should never be treated with so-called "protective" covering materials, since their use is decidedly harmful. On the apple and other pome fruits there can be no gain from treating small wounds at least, with considerable liability to harm. On very large wounds which heal only after several years, or not at all, it is possible that some protection of the wound may be useful by keeping out disease germs, but of this the experiments give no proof.—F. H. Hall, State Experiment Station, Geneva, New York.

Annual Meeting of Trustees Wenatchee North Central Fruit Distributors

The newly elected board of trustees of the Wenatchee-North Central Fruit Distributors held their annual meeting in the offices of the Sub-Central April 23d. The trustees present were J. G. Dollar, H. E. Tibbits, R. P. Webb, D. W. Roderick, J. B. Schons, T. I. Jones and W. L. Hatch. The following local trustees also were present: Ben F. Smith, F. L. Presnell and Frank Reeves.

D. W. Roderick was elected president, R. P. Webb vice president, J. G. Dollar secretary and J. B. Schons treasurer. Frank Reeves, member of the board of control of the West Wenatchee Fruit Distributors, was appointed attorney for the Sub-Central.

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You will also be interested in Myers Hay Unloading Tools and Door Hangers—Modern Implements that lighten harvest labors and insure Easy Doorways. Let us send circulars.

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ASHLAND PUMP & HAY TOOL WORKS

The Distributors' Central Selling Agency is now controlled on a tonnage basis. At present the Wenatchee district is entitled to three trustees. Those appointed were Frank Reeves, D. W. Roderick and H. E. Tibbits.

Strong feeling of confidence was expressed in the efficiency demonstrated by the growers' organization. It proved its ability to handle big tonnage in an orderly manner during a year of most trying and varied conditions. It is evident that this institution is rapidly gaining the confidence of the growers. The following resolution was passed unanimously:

"We, the members of the board of control of the Wenatchee-North Central Fruit Distributors, desire to express our confidence in the North Pacific Fruit Distributors. We believe the principles upon which this organization operates are purely co-operative and sound. The service and efficiency demonstrated by the Distributors, its capacity for doing big things, its ability to meet and adjust itself to trying conditions, its fairness and impartiality, commend our hearty endorsement.

"We hereby unanimously decide to continue the unqualified support of the Wenatchee-North Central Fruit Dis-

tributors to the North Pacific Fruit Distributors."

The annual meeting of the new board of control of the Central Selling Agency was held at the Distributors' offices in Spokane April 26. The annual meeting for the entire membership of the Wenatchee district will be held at the Wenatchee Commercial Club Monday, May 10, at 2 p. m.

Remarkable Progress of "Better Fruit," the Fruit Growers' Organ

In the balmy month of June "Better Fruit," published by the Better Fruit Publishing Company of Hood River, Oregon, in the interest of the fruit growers of the Pacific Coast, will celebrate its tenth anniversary. This journal has had remarkable progress ever since its first issue. As it goes into its tenth year it no longer has the appearance of a healthy youngster, but presents the strength and well-moulded form of vigorous manhood. As the organ of the fruit growers of the Pacific Coast "Better Fruit" is now firmly established. "Better Fruit" is replete with up-to-date and down-to-the-minute news of the fruit growing industry of the Pacific Coast. This news is presented in faultless typographical dress and is fully illustrated with artistic engravings, the color plates showing fruits of all varieties according to their natural appearance being most effective. While it would afford much pride to the fruit growers of California to have a periodical in this state to worthily represent them in the journalistic field, it is a matter for self-congratulation among them to find that Oregon is able, through "Better Fruit," to give to the world a publication that is a potent exponent of the entire Pacific Coast with especial reference to California.—Western Canner and Packer, San Francisco.

Spray and Culture Used to Control Pear Scab

Pear scab, the most serious fungus disease of pears in Oregon, may be controlled by proper spraying and cultural methods, according to the plant pathologists of the Agricultural College. It is caused by a fungus that may live over winter on decaying leaves and on the twigs, so that it is advisable to plow the leaves under in the spring before the trees blossom, and if the disease is

very well established on the twigs prune back as far as is consistent with good horticultural practice. Three sprayings are recommended—the first just as the blossom buds in the cluster begin to separate, the second just after the petals fall, and the third ten days or two weeks later. If the last application is washed off by a rain soon after it is made a fourth should be given. If the twig form is present in abundance it would be advisable to give an application about ten days before the first one mentioned above. Good results in the Willamette Valley are obtained by the use of lime-sulphur (stock solution 30 degrees Baume) diluted 1 to 30 parts water. If desired bordeaux 5-5-50 may be used in the applications made previous to the opening of the blossoms. Arsenate of lead may be combined with either mixture for codling moth where the time of application coincides with that for scab. Pear scab is not only injurious to fruit but cannerymen are calling attention to the fact that scab renders pears inferior for canning purposes, injuring both the texture and the color of the canned product. Growers that expect the top prices for their surplus pears cannot afford to neglect the recommendations for producing pears free of scab.

Feeding Bees in the Spring

Colonies of bees with good queens are now breeding up rapidly, and consequently are using large amounts of stores. Often the best and strongest colonies run short of honey first. The spring of the year is the critical time for a colony of bees. The owner should see to it that every colony has an abundance of honey for its needs. Combs of sealed honey may be taken from colonies that can spare them, or feeding of sugar syrup may be done. The giving of combs of sealed honey is recommended if there is little or no disease in the apiary; otherwise, sugar syrup should be fed. Sugar syrup should be fed warm and otherwise half or two-thirds water. See that the sugar is thoroughly dissolved. Feeding should be done in the evening, so the bees will have all the syrup taken up by morning. The feeders, such as the Alexander, Doolittle, Miller or Boardman, are all good and may be secured from the supply dealers.—Wesley Foster, State Bee Inspector, Boulder, Colorado.

When It's Blossom Time for Apples

Use broadcast 200 lbs. Nitrate of Soda per acre this Spring at or soon after Blossom Time.

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Secretary Western Fruit Jobbers' Association

Northwest Grading Rules, Season 1915

THESE grading rules for Washington, Oregon, Idaho and Montana were unanimously adopted at the Spokane conference April 28th, 1915, by the Northwest Fruit Shippers' Council, and by delegates from the following organizations: Apple Growers' Association, Hood River; Cashmere Fruit Growers' Exchange, Cashmere; Cashmere Fruit Union, Cashmere; Central Idaho-Washington Fruit Growers' Association, Garfield; Hayes Fruit Company, North Yakima; Idaho-Oregon Fruit Growers' Association, Payette; Montana Fruit Distributors, Hamilton; North Pacific Fruit Distributors, Spokane; Northwestern Fruit Exchange, Seattle; Northwest Fruit Growers' Council, Puyallup; Peshastin Fruit Growers' Association, Peshastin; Puyallup and Sumner Fruit Growers' Association, Puyallup; Randolph Fruit Company, North Yakima; Richey & Gilbert, Toppenish; Rogue River Fruit and Produce Association, Medford; Spokane Fruit Growers' Company, Spokane; Thompson Fruit Company, North Yakima; Walla Walla District Fruit Distributors,

Walla Walla; Wenatchee North-Central Fruit Distributors, Wenatchee; Wenatchee North-Central Washington Fruit Growers' League, Wenatchee; Wenatchee Valley Fruit Growers' Association, Wenatchee; White Bros. & Crum Company, Lewiston; White Salmon Valley Fruit Growers' Association, White Salmon; C. A. Wilmeroth, Wenatchee; Western Oregon Fruit Distributors, Portland; Yakima County Horticultural Union, North Yakima; Yakima Valley Fruit Growers' Association, North Yakima.

APPLES

"First Grade," "Grade No. 1," or "Extra Fancy" are defined as sound, smooth, mature, clean, hand-picked, well-formed apples only, free from all insect pests, diseases, blemishes, bruises and other physical injuries, scald, scab, scale, dry or bitter rot, worms, worm stings, worm holes, spray burn, limb rub, visible water core, skin puncture or skin broken at stem. The following varieties shall be admitted to this grade, subject to the color requirements specified:

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18¢
a rod

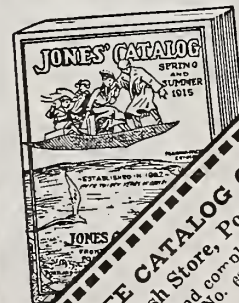
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Solid Red Varieties: Aiken Red, Arkansas Black, Baldwin, Black Ben Davis, Gano, King David, McIntosh Red, Spitzenberg (Esopus), Vanderpool, Winesap must have not less than three-fourths good red color. Jonathan must have not less than two-thirds good red color. Black Twig, Missouri Pippin must have not less than fifty per cent good red color.

Striped or Partial Red Varieties: Delicious, Staymen must have not less than two-thirds good red color. Ben Davis, Hubbardson Nonesuch, Jeniton, Kaighn Spitzenberg, Northern Spy, Wealthy, Rome Beauty, Rainier, Snow, Wagener, York Imperial must have not less than fifty per cent good red color. Gravenstein, Jeffrey, King of Tompkins County must have not less than one-fourth good red color.

Red-Cheeked or Blushed Varieties: Hydes King, Maiden Blush, Red Cheek Pippin, Winter Banana must have a perceptible blushed cheek.

Yellow or Green Varieties: Grimes Golden, Yellow Newtown, White Winter Pearmain, Cox's Orange Pippin must have the characteristic color of the variety. Ortleby must be white, yellow or waxen.

"Second Grade," "Grade No. 2," "Fancy" apples are defined as apples complying with the standard of first-grade apples, except that slight leaf rub, scratches or russeting shall be permitted up to a total of one inch in diameter in counts running 125 or less to the box, or three-fourths of an inch in diameter in counts running from 138

to 163 to the box, and one-half inch in diameter in counts running 175 or more to the box; and limb rubs will be permitted showing an aggregate area in the various counts of one-half of that allowed for leaf rubs, providing that no apple shall show total blemishes aggregating more than one inch in diameter in counts running 125 to the box or less; more than three-fourths inch in diameter in counts running 138 to 163 to the box, and one-half inch in diameter in counts running 175 to the box or more. No clearly misshapen or bruised apple, or apples bearing evidence of rough handling shall be permitted in this grade. The following varieties shall be admitted to this grade, subject to the color requirements specified:

Solid Red Varieties: Aiken Red, Arkansas Black, Baldwin, Black Ben Davis, Gano, King David, McIntosh Red, Spitzenberg (Esopus), Vanderpool, Winesap must have not less than forty per cent good red color. Jonathan must not have less than one-third good red color. Black Twig, Missouri Pippin must have not less than twenty-five per cent good red color.

Striped or Partial Red Varieties: Delicious, Staymen must have not less than one-third

good red color. Ben Davis, Hubbardson Nonesuch, Jeniton, Kaighn Spitzenberg, Northern Spy, Rainier, Snow, Wagener, Wealthy, York Imperial must have not less than ten per cent good red color. Gravenstein, Jeffrey, King of Tompkins County must have not less than ten per cent good red color. Rome Beauty—No specific color requirement is defined for Rome Beauty in this grade other than that each specimen must show a perceptible blush or overspread of reddish color characteristic of the variety; except that Rome Beauty apples of 96 size and larger shall be admitted without color.

Red-Cheeked or Blushed Varieties: Must have correct physical quality with tinge of color.

Yellow or Green Varieties: Must be of the characteristic color.

"Third Grade," "Grade No. 3" or "C" grade apples shall consist of mature apples free from all insect pests, worms, worm holes, infectious diseases, skin punctures, bruises or broken skin, but slightly misshapen apples or those having sunscald, not to exceed two healed-over stings, and the blemishes allowed for second-grade apples shall be permitted, and there shall be no requirement as to color.

"Combination Extra Fancy and Fancy" grade.—When first and second-grade apples are packed together the packages must be marked "Combination Extra Fancy and Fancy." Combination grade may also include all other

Position Wanted

By an experienced orchard and ranch man with executive ability as foreman; 12 years in West. Best references furnished. Strictly temperate. Can furnish A-1 3300-pound team if necessary. Address Box S, care "Better Fruit."

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apple varieties not provided for in first and second grades. When second and third-grade apples are packed together the packages must be marked "Third Grade." When first, second and third-grade apples are packed together the packages must be marked "Orchard Run," but orchard-run packages must not contain any apples that would not meet the requirements of third grade.

Summer and Early Fall Varieties.—Summer varieties such as Astrachan, Bailey's Sweet, Bietingheimer, Duchess, Early Harvest, Red June, Strawberry, Twenty Ounce Pippin, Yellow Transparent and kindred varieties not otherwise specified in these grading rules, together with early fall varieties such as Alexander, Blue Pearmain, Wolf River, Spokane Beauty, Fall Pippin, Waxen, Tolman Sweet, Sweet Bough, and other varieties not provided for in these grading rules, as grown in sections of early maturity, shall be packed in accordance with the grading rules covering Fancy grade as to defects, but regardless of color rules. All apples packed otherwise than according to the foregoing grading rules shall be accompanied by printed description of the contents on each package.

PEACHES

Peaches should be picked for packing only when fully developed, but firm or hard ripe. Yellow-meated varieties should show some yellow color. The fruit should be picked and laid, not dropped, in the basket or pails, and should be taken from the vessel only at packing table. All possible care should be used to avoid bruises.

Use standard peach boxes; cleats on top only; use 4d special orange-box cement nails for bottoms and sides. Drive nails one inch from corner, four nails to each piece. Use three 4d cement box nails for each cleat, one in the center and one driven two inches from the end of the cleat. The cover should hold the fruit firmly in the box but should not bulge more than three-eighths of an inch. Use 4½-inch boxes only for Elberta peaches running 50 to 84, both inclusive, avoiding the use of extra cleats except in extreme cases. Peaches that are too large to be laid five wide in the box should be packed two and three in 4½-inch boxes. If the peaches are roundish, as in the case of Crawford's, it will be necessary to use some 4-inch boxes with this pack.

Peaches that will go five across the box or smaller should be packed three and three in 4-inch boxes. The excellence of the pack depends upon uniform grading. The peaches in a box should not vary more than one-eighth of an inch in diameter. All peaches must be carefully wrapped in suitable paper.

Peaches that run less than 96 to the box must not be packed for shipment. Eighty-four count must be the minimum for Elberta. In packing the box should set on an incline with the lower end of the box to the packer. Both tiers should be carried forward together. The peaches should be placed in the box stem-end down; those in the

Compare them



Compare the little old Haynes "horseless carriage" of 20 years ago with the latest 8-cylinder car. *Some advance!*



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Compare the old battleship Oregon—now a side-show at the Panama-Pacific—with the new super-dreadnaught Wyoming.



The new "75" is just as much stronger. Simpler, too—5 pieces in the track unit where it took 25 three years ago—less wear, no waste of power, longer life.



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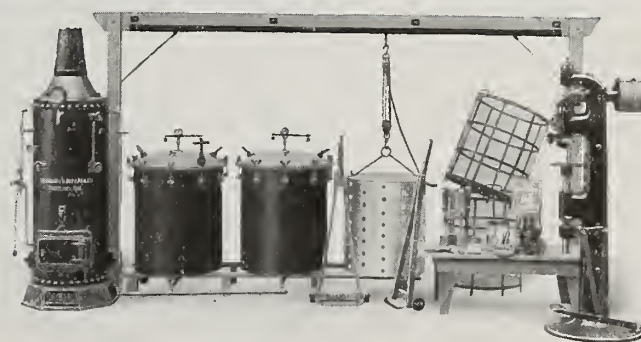
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Canning! Canning!

This Steam Pressure Canning Plant will save your perishable Fruit Crop when nothing else will. Ten different size outfits to select from.

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Do It NOW "Procrastination is the thief of time." Don't send inquiries when your evaporator should be under construction. Take time by the forelock; come early and avoid the rush. Are YOU going to wait till that sad time—TOO LATE. It you don't want those pigs to eat your big red apples write us TODAY.

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Western Commercial Fruit Evaporator Co.

1005 Chamber of Commerce Building, PORTLAND, OREGON

SEE PICTURE OF PLANT IN MARCH, APRIL AND MAY ISSUES OF "BETTER FRUIT"

Our managing engineer will "sit up nights" to answer inquiries NOW; but will be "very busy" soon.

top tier resting in the spaces between those in the lower tier so that no peach will rest squarely on top of another.

Pack all peaches with the loose end of the wrapper down. No overripe, under-sized, immature, bruised, misshapen, diseased, wormy or otherwise defective fruit should be packed. The variety, numerical count and grower's name to be placed on the label-end of the box with rubber stamps.

PRUNES AND PLUMS

Pick as large a percentage as possible with stems on. Throw out all stemless fruit when skins are broken or torn. Pickers should be very careful in picking not to brush off the bloom. Gloves should never be used in handling prunes and plums. Prunes and plums should be hard ripe for picking. Fruit should contain some sugar and be matured enough so it will continue ripening and have a good flavor. Fruit should be free from all insect pests, scale, scab, blemishes and physical injuries.

Prunes and plums and all such fruit should be packed in four-basket prune crates unless ordered otherwise. Fruit too small to pack 6x6 top should never be packed in prune crates and should only be shipped in 3½-inch peach boxes. Whenever possible use a square pack.

Pack all Tragedies and Italians three-tier deep, top layer stem-end down; bottom layers to be packed and not jumbled; pack top tier with creased side up and all the same way. Hungarians, Bradshaws, Peach Plums and similar varieties that pack smaller than 5x5 in prune crates should not be packed.

PEARS

There shall be three grades of pears, Extra Fancy, Fancy and C grade.

Extra Fancy.—This grade shall consist of pears that are hand-picked, clean, sound and free from insect pests, sunscald, scab, scale or other diseases, worm holes, stings, limb rub, misshapen, broken skin or stemless, bruised, or evidence of frost by russetting, rough handling or serious defects, excepting a small amount of russetting, not clearly noticeable or covering a total area to exceed one-half inch

square may be admitted, no one spot to exceed one-fourth-inch area. No pears smaller in size than 175 to the box shall be permitted in this grade. Packed boxes should weigh not less than 50 pounds gross, except Winter Nelis, which shall weigh at least 47 pounds gross.

Fancy.—This grade shall consist of all fruit which does not meet with the requirements of the Extra Fancy grade as to blemishes, deformities and sizes, but which in every way is sound and marketable and shows no disease, skin puncture, stemless or defect that would injure the keeping qualities. Slightly misshapen fruit may be admitted in this grade. Pears will be accepted in this grade as small as 200 to the box.

C Grade.—This grade shall consist of all fruit which does not meet with the requirements of the Extra Fancy and Fancy grades as to blemishes and deformities but which in every way is

sound and marketable and free from disease. Smaller pears than 200 count to the box will be admitted in this grade.

In the case of Winter Nelis and Bosc varieties same grading will apply except that the natural russetting is desirable and required. Winter Nelis to be accepted 200 count to the box in Extra Fancy and 300 to the box in Fancy grades. Every box of pears shall have clearly stamped upon it the number of fruit contained in the box. All packed pears to be wrapped.

CHERRIES

10-lb. Boxes.—All marketable varieties must be in perfect condition, of the right degree of ripeness, free from all insect pests and blemishes. Stemless cherries to be kept out. In packing the ten-pound boxes care must be taken by the packer to have the cherries as near uniform in size as possible

Continued on page 23



Courtesy of Southern Pacific Railway

Berkshire Hogs of Yamhill County, Oregon, showing diversified farming in the Northwest along the line of the Southern Pacific Railway

Handling Fruit by Machinery

The fame of Hood River Fruit is backed up first by the wonderful finish of nature's delicate touch and the extreme richness of flavor imparted by the perfect soil and climatic conditions of the Hood River Valley, but advanced methods in grading and packing the product have attracted the attention of both the trade and the general public, who appreciate superior food articles.

Now comes Walter G. Palmer, a noted Hood River inventor with a real practical and efficient machine for grading fruit. For several years Mr. Palmer has been improving his machine until now he has brought out a "simply wonderful and a wonderfully simple machine," with almost unlimited capacity, which will handle any kind of fruit ranging from one and one-half to four inches in diameter, or special machines can be made to handle fruit or any irregular roundish articles accurately up to six inches or larger in diameter.

This machine has three channels with traveling conveyors. Each channel has a capacity of about 150 apples per minute, or 275,000 apples in ten hours, which is equal to handling more than 2000 boxes or 700 barrels of apples in ten hours and running at half its capacity would handle nearly two car loads a day.

When three grades are wanted, each channel will handle one grade separating the principal grade into nine sizes, the second grade into six sizes, and the third grade into three sizes, or when only two grades are required, two channels can be used for the principal grade and one channel for the second grade, separating both grades into nine sizes.

The strong feature of this machine is that the fruit passes through square holes which expand both longitudinally and laterally at the same time, beginning at the feed end at 1½ inches square and expanding to 4 inches square at the opposite end, the fruit being discharged at a point where the expansion is sufficient to allow it to pass through into the bins.

The second important feature is Mr. Palmer's device for laying the fruit from the bins into the bottom of the boxes or barrels a half bushel or more at a time, more gently than the ordinary person would lay them in two or three apples at a time by hand.

In order to comply with the state law and also the demands of the trade, handling large crops of apples by hand is a thing of the past, as hand labor is too expensive and not sufficiently accurate, hence the production of this wonderful machine is very timely.

A cut of this machine appears on page 21 of this issue of "Better Fruit."
—[Adv.]

A letter from the Spokane Fruit Growers' Company announces that Mr. L. J. Blot, formerly district manager for the North Pacific Fruit Distributors,

with offices at Minneapolis, has accepted a position with the Spokane Fruit Growers' Company. According to their letterhead, this company is affiliated with the North Pacific Fruit Distributors. It is capitalized for \$125,000, with offices in the Hyde Block, Spokane. Mr. Blot's record with the Distributors is good evidence of his qualification as a salesman. Therefore, it is expected he will render efficient service in this important position. The Spokane Fruit Growers' Company expects to do special work for the Spokane district, which is a comparatively new district and not so well known as some of the older-established districts. The Spokane fruitgrowers feel that through an organization of this kind, with concentrated effort, they can put the Spokane country on the map with the fruit dealers and the fruit-consuming public in a very rapid way.

Mr. Sam G. Campbell of Hood River, for the last two years inspector for the North Pacific Fruit Distributors, will have full charge of the inspection service for the Hood River Apple Growers' Association during the year 1915. There is no man in the Northwest that understands this business better than Mr. Campbell. The editor knows this, having selected Mr. Campbell as his inspector when he was manager of the Hood River Apple Growers' Union during its early years of organization. Mr. Campbell is an expert packer and knows the grading rules like the multiplication tables, and knows how to apply them with good judgment and intelligence. In addition to this, Mr. Campbell is a man of decision and firmness, at the same time tactful, diplomatic and respectful. The grower who thinks he can "get by" Mr. Campbell, will find if he tries, he has run up against a stone wall. In addition to this, Mr. Campbell is a splendid fellow, a courteous gentleman and a true friend.

The Bean Spray Pump Company of San Jose, California, has a very nice display of sprayers on exhibition at the Panama-Pacific Exposition, and through "Better Fruit" extends an invitation to all fruitgrowers to make the "Bean Booth" headquarters when visiting the Exposition. One feature of the exhibition which draws much attention is the "10-horsepower Bean engine," mounted on a circular table and revolving slowly by its own power. The Bean Spray Pump Company has a complete line of spray outfits ranging from a small rig for one man, known as the "Bean Eureka," to the "Bean Giant," which has a capacity of eight to ten gallons per minute. The small fruit-grower will appreciate and be interested in the "Bean Eureka," as this machine is calculated to do away with the use of a hand pump which the small fruitgrower has been compelled to use. The sprayer is light, so that one horse can pull it, and especially adapted to the small orchard, and being very light can be used on hilly ground. The "Bean



WINANS' PATENT

FIRST AID TO FRUIT TREES

Winans' Net Tree Support

Prevents fruit-laden trees from breaking, holding the limbs up more efficiently and at much less expense than propping. Holds limbs in place, preventing damage and dropping when the wind blows. Meshes are large enough so fruit can be picked through them—open at bottom so picker can get inside the net, or net can be removed at picking time.

This net of finer mesh will keep the birds from eating the blossoms or fruit in districts which are thus troubled.

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The most thoroughly organized and completely equipped Military School west of the Rocky Mountains; Cavalry, Infantry, Mounted Artillery. Sixteen miles North of San Francisco; U. S. army officer detailed by War Department; accredited by the University of California, Stanford and other Colleges. Twenty-sixth year begins August 24th, 1915.

Address Rev. Arthur Crosby, A.M., D.D.

Giant," of course, commands more attention, for the reason that a large outfit is more extensively used by the commercial orchardist. In connection with the exhibit of spray outfits the Bean Spray Pump Company also has a splendid exhibit of centrifugal pumps, in which this company does a large business. The fruitgrowers will not only find this exhibit exceedingly interesting but a very profitable place to make headquarters, as the California people are celebrated for their hospitality.

Client: "I want to sue for a divorce and an allowance of \$1,500 a year." Lawyer: "What is your husband's income?" Client: "It's about that. I wouldn't ask for more than the man makes. I'm not that kind."—Boston Transcript.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

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of Congress of March 3, 1879.

Home Canning Outfits—The Experiment Station of Idaho has demonstrated very successfully that home canning is a success. The business is carried on in a business like way; the exact cost is obtained and the output sold at a profit. The whole output of the home cannery in connection with the Experiment Station at Moscow was taken entirely by the hotels, restaurants, boarding houses and private families in that city. A number of fruit growers could install home canneries and sell their entire outputs in the local city where they trade. Those who could install a large outfit, by visiting some of the large cities and calling on the hotels, restaurants, boarding houses, etc., could easily dispose of their entire output at a satisfactory price. For quality and flavor it is hard to beat home canned fruit which is put up fresh from the orchard the day it is picked. This is a subject that is well worth the attention of every fruit grower, and one that every fruit grower should investigate. Home canning outfits can be purchased at very reasonable figures, all the way from \$25 to \$100. Catalogues can be obtained by writing the dealers who handle cannery supplies, and these catalogues not only give the price of the outfit but the size, and other information of much value.

Blossom and Early Estimates.—It seems to be an established custom to call for blossom estimates. For this there must be a reason, but the reason never seemed very clear. Blossom estimates are not very significant. It is true that if there are no blossoms there will be no crop. On the other hand it is equally true there may be

a heavy bloom and a light crop. Just why the fruit growers should be called on to "count their chickens before they are hatched," has never been very satisfactorily explained. It usually does more harm than good. Any information that is not correct information and that is not reliable is pernicious. Where estimates are made in the bloom, it is calculated the crop will be in accordance with the bloom. It invariably happens that there is an immense shedding following the blooming period, with the June drop afterwards. Therefore in most cases the blossom estimates are over estimates and create exaggerated impressions in regard to the quality of the crop, which are very difficult to overcome. All reputable dealers, handlers and growers should stand for reliable estimates. Apples are seldom sold or contracted for before July or August, and usually not until the harvesting begins, therefore it seems it is ample time to furnish estimates, if they are given when the crop is set, when there is reasonable assurance of the estimator being able to estimate intelligently with some degree of certainty.

The Northwest Fruit Grading Rules.

—This edition contains a complete copy of the grading rules that were adopted by a committee from the Fruit Growers' Council and the Fruit Shippers' League at a joint session held in Spokane. It will be the first time in the history of the Northwest that a uniform grade has been adopted by all sections, all shippers and all growers. This should mean much towards standardizing the fruit industry of the Northwest, which means extra money for everyone engaged in the fruit business. Business is largely done on confidence, but confidence will not hold trade unless the goods are up to standard, therefore it behooves every grower this year to conform absolutely to grade requirements, doing his grading intelligently and honestly. Intelligence and honesty in grading will put many extra dollars in fruit growers' pockets. You can fool a man once, but you cannot fool him twice on the same thing very often.

The Apple Crop of the Northwest.

It is too early to put out anything definite in the way of crop estimates in the Northwest at the present time, because the first shedding after the bloom is not yet over and the June drop not yet occurred. However, it is a fact that the bloom this year was very irregular and in many orchards very light. The shedding following the blossom has been exceedingly heavy and very erratic; some trees shedding completely, others partially, and frequently one limb of a tree would shed while the balance of the tree would set fairly well. Generally speaking the shedding has been very severe. All of the old orchards from 12 years of age and over have shed

excessively heavy, the young trees from 5 to 12 years of age have set much firmer and better than the older orchards. It is the general impression that the apple crop of the Northwest this year will be very much lighter than in the year 1914.

Crop Estimates.—This edition contains a splendid article explaining fully and thoroughly how the Government estimates are made. It should be read by every fruit grower, who is a subscriber to Better Fruit, who should pass it along to his friends, if there are any in the fruit business, who are not subscribers. There has been a great deal of difference between the Government estimates, the International Apple Shippers' estimates, and the growers' estimates. An intelligent understanding of how Government estimates are made will account for this vast difference. The Government estimates the entire crop that is produced, including what is shipped, what is consumed by by-product factories, and what goes to waste. District estimates usually only include what is shipped in carlots.

"The Consumer's Dollar," published in the May edition of "Better Fruit" was an address given by Mr. G. Harold Powell, before the Western Fruit Jobbers' Association of America at Los Angeles this year. This excellent address was published in the Western Jobbers' monthly publication, and also in pamphlet form, copy of which was furnished "Better Fruit," the same being re-printed in the May edition. The editor desires to say it was an oversight in not giving credit to the Western Fruit Jobbers for a copy of this article, and also for neglecting to state it was an address delivered by Mr. G. Harold Powell before the Western Fruit Jobbers' meeting at Los Angeles, California.

Evaporators.—An immense amount of fruit goes to waste every year when the fresh fruit markets are glutted. There is always a good demand for evaporated and dried fruits. The sale for dried or evaporated prunes is immense every year. There is a good demand for evaporated apples. Fruit growers ought to give the matter serious attention and act quickly, as the time is getting short, if you intend to install an evaporator this year.

Canning Fruits.—The Northwest is at last beginning to realize the importance and the necessity of canneries in connection with the fruit industry. A large cannery is being built at The Dalles, Oregon; another large cannery is being built at North Yakima. A cannery was erected at Hood River last year.

The walnut crop of California for the year 1915 looks unusually good and will probably be one of the largest crops of walnuts produced in the state.

Fruit Distributors Perfecting Organization

The North Pacific Fruit Distributors have made some marked changes and improvements, which are fully outlined in the plan of re-organization, which was explained quite fully in the May edition of "Better Fruit." Since then the officials have been very active in perfecting their organization and laying the plans for the coming season. Some important changes have been made in the officials, Mr. H. F. Davidson resigned as President, and Mr. F. A. Reeves of Wenatchee, has been elected President. Mr. Reeves is one of the prominent fruit growers of the Wenatchee Valley. He has the reputation of being one of the ablest attorneys in the State of Washington, a splendid business man and very progressive. With his able advice and counsel, not only as an attorney but as a successful business man, it is only just and fair to assume that the North Pacific Fruit Distributors will render efficient service.

The Hood River district in withdrawing from the North Pacific Fruit Distributors expressed no dissatisfaction with the Distributors, but on the other hand commended the Distributors for the excellent work they had done, saying, "In the past two years that better results had been obtained by marketing through the North Pacific Fruit Distributors than would have been obtained without their assistance." It is believed by Hood River, owing to the fact that its apple output is confined principally and almost entirely to two varieties, the Newtowns and Spitzenburgs, that by special concentration on these two varieties, which Hood River can give through sales agents of its own, that better results can be secured than in any other way. However, it is the general impression that the Distributors will not suffer from the withdrawal of Hood River. On the contrary, it is believed that other districts will increase their tonnage with the Distributors, and it therefore looks as if they would handle as great if not a greater percentage of the crop this year than last year.

The following is a list of the new Board of Trustees for the North Pacific Fruit Distributors for 1915: Yakima—C. H. Hinman, South Nob Hill; P. L. Porter, Donald; Austin Woodyard, Sunnyside; W. B. Armstrong, Lower Nachez, and C. H. Stein, Selah. Wenatchee—D. W. Roderick, West Wenatchee; Frank A. Reeves, North and East Wenatchee, and H. E. Tibbits, Cashmere. Idaho-Oregon—W. N. Yost, Meridian, and J. H. Lowell, Parma-Roswell. Walla Walla—Harry Huber, Milton, Ore. Central Idaho-Washington—F. M. Slagle, Pullman. Montana—Ward M. Sackett, Corvallis. Western Oregon—C. A. Park, Salem. Spokane and Hood River—Unrepresented.

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There are reasons for this ever-increasing demand.



SECURITY
8-foot Tripod

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If not in stock in your town the SECURITY Introductory Offer is open to you.

Write for details.

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Dear Sir:

Kindly enter the following order for shipment January first:

Ship to us at Wenatchee, Wash.

10	-	6	ft.	triped	Security	ladders.
75	-	9	"	"	"	"
100	-	10	"	"	"	"
50	-	12	"	"	"	"
15	-	14	"	"	"	"

Ship to us at Cashmere, Wash.

60	-	8	ft.	triped	Security	ladders.
75	-	10	"	"	"	"
9	-	12	"	"	"	"
30	-	14	"	"	"	"
4	-	16	"	"	"	"
2	-	18	"	"	"	"

Yours very truly,

WENATCHEE PRODUCE CO.

A postal brings you 1915 Illustrated booklet and the WHYS of Security Success

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LOS ANGELES

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Extensive growers of all lines of Fruit, Nut and Shade Trees, Evergreens, Flowering Shrubs, Vines, Roses, etc. Introducers of the VROOMAN FRANQUETTE walnut, recognized as the best walnut. Our large complete stock consists of varieties suitable for every kind of climate.

Write us about your wants before buying.

Mr. Wilmer Sieg

The Hood River Apple Growers' Association, which is a continuation of the Hood River Apple Growers' Union, having associated with it the Davidson Fruit Company and the National Apple Company, has had a number of managers. The first manager was Mr. Joe Wilson in 1903. The next manager was Mr. E. H. Shepard, Editor of "Better Fruit," who served for several years. He was followed by Mr. Huxley, who is now connected with the Hood River Exchange. Mr. Huxley was followed by Mr. C. H. Sproat, an apple grower of Hood River. Then came the upheaval, when Hood River was split seven ways for Sunday, and several new organizations were formed, the Directors of the Hood River Apple Growers' Association decided to get someone outside of

the district, appointing a committee for this purpose. This committee made a very thorough search throughout United States and finally decided upon Mr. Wilmer Sieg of Milwaukee, Wis. Mr. Sieg came west and accepted the position in 1912. In 1913 the Hood River Apple Growers' Union was merged into the Hood River Apple Growers' Association, which marketed through the North Pacific Fruit Distributors. Mr. Sieg was taken over by the Distributors as one of the Sales-managers with an office in Hood River. In 1914 the Hood River Apple Growers' Association marketed through the Distributors and Mr. Sieg was moved to Portland, maintaining an office in that city under the employ of the Distributors, and in January, 1915, Mr. Sieg went East to look after the export business to Europe, to succeed Mr. Davidson, who had to

Avoid Mistakes in Pump Buying

**LET US SEND YOU THIS
FREE BOOK WHICH IS A SURE
GUIDE TO PUMP VALUES**

Most articles can be judged with fair accuracy at the time of purchase but some cannot, for instance pumps. Unless you have had previous experience with a brand or make of pump, you don't know until you have the pump in service for some time whether it is worth the money you paid for it. We want to help you to full value by sending you this pocket Myers Pump Catalog. Be guided by this little booklet, and you will make no mistakes in pump buying. It shows in a brief way the big Myers line of well pumps, power pumps, tank pumps, for deep wells, shallow wells and for every service. Each year for many years we have been shipping a trainload of Myers goods into this territory, the trainload is constantly getting longer and longer, it is only a question of time until every pump user will know by his own experience or through word of neighbors that MYERS signifies the largest value possible to build into a pump.

We handle the largest and best line of pumping and water supply goods on the Pacific Coast

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LEWIS & STIVERS CO.

Portland,
Spokane
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The Myers Patented Glass Valve Seat

If the Myers Pumps had no other advantage than the Myers Patented Glass Valve Seat they would still be far superior to others. This glass seat is simply the difference between drinking water from a clean glass and a rusty tin cup.

Other Myers advantages, big capacity, easy operation and extralong life

This book-let also shows the

**MYERS
Line of
Hand and
Power
Spray Pumps**

Get it by checking and sending the coupon. Then see the pump you select at the local Myers store.

More dealers handle Myers Pumps than any other make

Dear Sirs—
Without obligation to me, send your pocket Myers Pump Catalog. I am interested in pumps as checked below.
Well Pump, Power Pump
for Shallow Well
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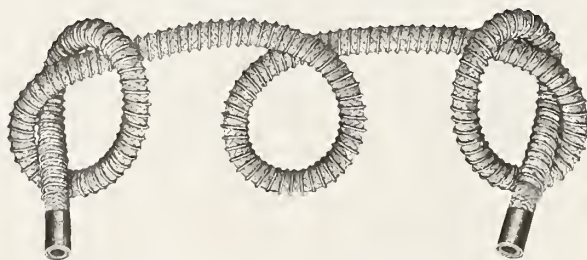
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Mulconroy Flexible Metallic Spray Hose

**Can't Kink, Twist, Burst, Collapse or Chafe
LIGHT — STRONG — FLEXIBLE**

Answers all requirements for all kinds of spraying. 1000 lbs. pressure will not burst it. Weighs 6 oz. to the foot, and will coil in a 3-inch circle. Tube specially compounded to stand spraying solutions. Hose cannot kink, and therefore delivers full capacity at all times. Outside protected against knocks, dragging over rough surfaces, and sharp turns.



Trial order will show satisfaction and economy.

Manufactured solely by **MULCONROY COMPANY, Inc.** Established 1887

PHILADELPHIA

AGENTS WANTED

NEW YORK

return to look after his interests here. The Board of Directors of the Hood River Apple Growers' Association, after due consideration and deliberation, selected Mr. Sieg as Salesmanager for the coming year, which position he now occupies, with an office in Hood River. Mr. Sieg has devoted his entire life to the fruit and produce business and has built up a reputation that is equal to the best that is a record of achievement anyone could well be proud of, and has a host of friends. There is probably no other salesman connected with any of the Associations who has a wider acquaintance or

warmer friendship with the dealers all over United States than Mr. Wilmer Sieg. Mr. Sieg fell in love with the West, particularly Hood River, and having worked energetically and devotedly for the Hood River district, felt it his duty to accept the position with the Hood River Apple Growers' Association, although he was offered several other positions at higher salary in the East. He says, he has fallen in love with the West, which he intends to make his future home. It is his pleasure to assure the growers that he will give his best ability and most earnest service in marketing

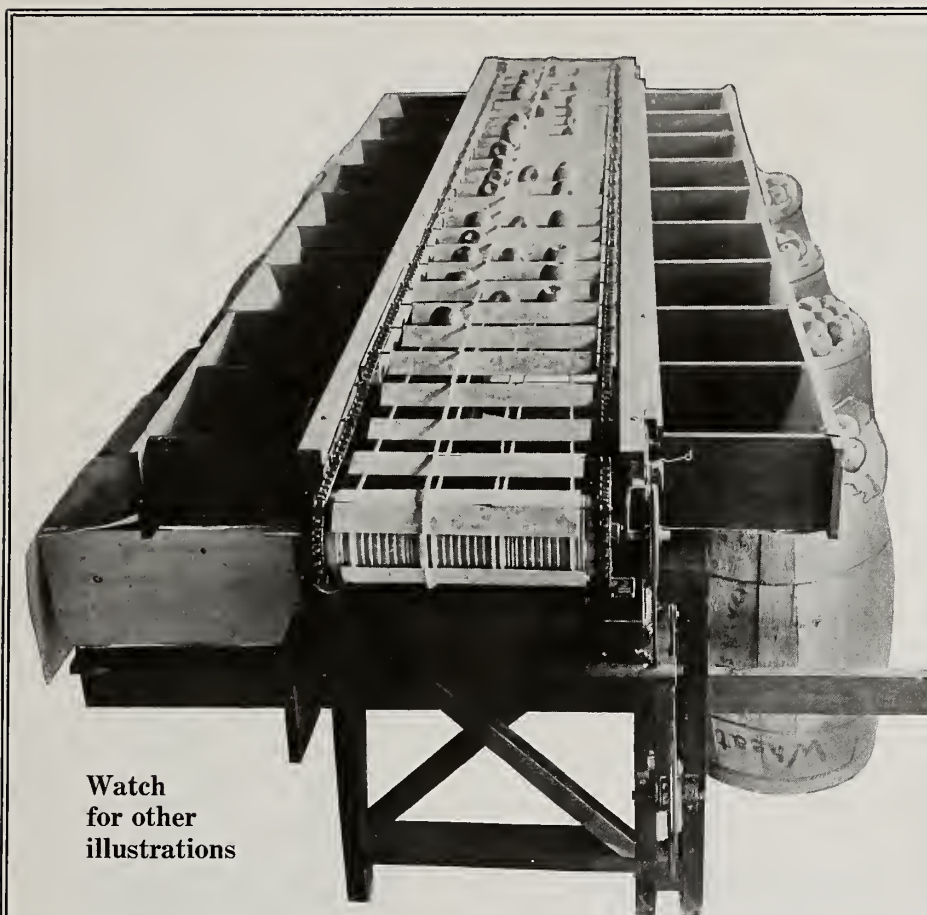
their fruits to the best possible advantage, and in doing this, other districts can feel assured that he will give them a clean, honest competition.

Mr. F. E. Myers, of the firm of F. E. Myers & Bros., manufacturers of spray pumps, force pumps, hay tools and various other farming implements, of Ashland, Ohio, has just been appointed a member of the Jury of Awards at the Panama-Pacific International Exposition. This is very much of an honor and one we understand was entirely unsolicited by Mr. Myers. Mr. Myers will undoubtedly render efficient service in this capacity, and it may be said that it is a good plan on the part of the Exposition people to appoint Eastern people to various positions, because it will give them a splendid opportunity to familiarize themselves with the West and its wonderful opportunities.

A Caterpillar in Actual Service

The following extract from a recent letter regarding the use of a tractor in orchard work speaks for itself:

"We have had a Baby Holt Caterpillar Tractor in the 600-acre Baker-Langdon Orchard, adjoining Walla Walla, for the past three seasons. This is an 18-horsepower (drawbar) engine. Our land lies practically level, the soil is a rich bottom loam and sub-irrigated. We find by using this tractor, and attaching to it a 13-foot disc weighted down to force same 5 or 6 inches into the ground, and then attaching behind this disc a 13-foot spring-tooth harrow, we are able to keep a beautiful mulch on our ground without the necessity of plowing more often than once in two or three years. Later in the season, after we have completely done away with all weeds that have grown through the winter and early spring in this rich soil, we drop off the spring tooth and in its stead attach a common peg-tooth harrow, or harrows of the same width, which leaves the surface of the soil smoother than when the spring tooth is used. This machine this spring has covered from 30 to 40 acres per day, doing much better work than any three four-horse teams could possibly do; by that I mean no four-horse team could pull a disc and spring tooth thrown into the ground to the depth we put them and get away with 10 or 12 acres per day; indeed I am quite confident we do a better job with the tractor than four or six-horse teams could do. On the tractor we have a driver, who is a young man with but little previous experience, who handles the machine beautifully; in addition we have one man who follows behind the spring tooth when running in weeds, to clean them when required and shift them around any tight place at the end of tree rows. This, however, is an exception rather than the rule, for the driver by passing or skipping one row makes a very certain turn. This helper often spells the driver and thereby becomes



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for other
illustrations

PALMER FRUIT GRADER

Grades three grades at a time:

First Grade—9 sizes

Second Grade—6 sizes

**Third Grade—3 sizes for
boxes and any less number of
sizes desired for barrels.**

Complete with sorting table occupies a floor space of 5x18 feet. Grades over square holes which expands from 1½ to 4 inches square in traveling 11 feet.

Discharges the fruit into boxes or barrels without bruising.

Capacity 275,000 apples in ten hours. Working at half capacity will handle about a car and a half daily.

Box packing can be done direct from the machine or preferably on separate tables, giving the grower a chance to work his packers on the particular sizes and grades he wishes packed first.

Write or wire for catalogue and prices.

Palmer Bucket Co.

HOOD RIVER, OREGON

posted on the machine and capable of handling it if necessary. On an average we use about 28 gallons of distillate per day, and about 2 gallons of lubricating oil, worth 53 cents per gallon. Of course there is some wear and tear on the machine, much depending on the operator, but properly treated, I believe we reduce our cost of cultivation about 50 per cent, to say nothing of the satisfaction in doing the work well. We operate about three to four months in a season, all cultivating ceasing in September to enable the trees to become dormant when the proper season arrives for them to do so. There are probably no larger or more thrifty apple trees in the world, for their age, than our five-year-old trees.—Yours very sincerely, Baker-Langdon Orchard, by J. W. Langdon, Manager."

The Peach-Twig Borer

The peach-twig borer has become one of our most destructive pests to the peach trees in Colorado. It is also one of the insects that is controlled with comparative ease if the proper remedies are applied at the correct time. We have been most successful in our experiments for the control of this pest when we have used either the ordinary home-made lime-sulphur spray or any reliable commercial lime-sulphur spray in the proportion of one gallon of the commercial article to each nine gallons of water. We have also had very good success in the control of this insect by spraying with

arsenate of lead in the proportion of six pounds of the paste to each one hundred gallons of water. Whichever of these insecticides is used, the application should be made a few days before the blossom buds begin to open enough to show the pink color.

The second brood of worms of this insect cause what is commonly called gummy peaches, although gummy peaches are very often due to other causes, so that the peach borer should not be blamed with the exudation of gum upon the fruit unless the burrow of the little worm can be found opening at the point where the gum exudes. After the peach borers have hatched and begun their work of killing the new growth, if the attack is at all serious, considerable benefit can be derived by promptly cutting off all infected new growths and burning them, or otherwise destroying the borers.—C. P. Gillette, Colorado Agricultural College, Ft. Collins.

Fighting Leaf Curl in New York State

The New York State College of Agriculture has issued the following circular regarding the dangers from peach leaf curl: "The three important factors to consider in the control of the disease, are time of application, thoroughness of application, and material applied. The application should be made before the buds begin to open, because at this time, under favorable weather conditions, the infection takes place. After this has

occurred subsequent applications to prevent the disease this year are useless. Select the first bright warm day for the application. Many persons sprayed too late last year.

"The spray material used should come in contact with every bud, for the fungus spores are sticking to the buds and these must be hit by the spray mixture in order to have perfect control. A fine spray under high pressure is most satisfactory. Some failures of last year were due to too much hurry in the application.

"The disease is readily controlled by each of several fungicides. Lime-sulphur solution (testing 32 degrees Baume) diluted with water in the proportion of one part solution to eight parts of water, should be used when both San Jose scale and leaf curl are to be controlled. When scale is not present, the lime-sulphur solution at a dilution of one part lime sulphur to 15 parts of water, or Bordeaux mixture in the proportion of five pounds copper sulphate, five pounds of lime, and 50 gallons of water. Since thorough spraying will absolutely control leaf curl, every peach grower should take steps to prevent its destructiveness this year."

The Washington State Horticultural Association has just issued the proceedings of the Eleventh Annual Meeting of the Washington State Horticultural Association held at Wenatchee December 9-10-11, 1914.

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—all lubrication

ZEROLENE

the Standard Oil for Motor Cars

Dealers everywhere, and at all our
agencies or Service Stations. Or ask
us about delivery in bulk.

Standard Oil Co.
(California)
Portland



The Hardie Mfg. Co.

ANNOUNCES A NEW DEPARTMENT IN
ITS LINE OF

Orchard Supplies

If you are in need of a Lid Press, Nail Strippers, Ladders, Picking Bag, Picking Pail, Pruners, or any of the many devices used in picking and packing fruit, you will need our new catalog — which will sent on request.

The Hardie Mfg. Co.

49 North Front Street

Portland, Oregon

MR. G. W. COBURN was born at Seneca, Kansas, in 1879, and is now 36 years of age. Six years later he moved to Whitewater, Wisconsin, where he attended the public school, graduating from high school in 1879, afterwards attending the Whitewater Normal School, earning his money working alternately one year and teaching school the next year. After graduating from the Whitewater Normal School he attended the University of Wisconsin, taking a special course in the School of Commerce. Mr. Coburn spent two years in the United States Census Office in the Department of Agriculture, having charge as chief of a section, which gave him a splendid opportunity to obtain a very thorough knowledge of agricultural work in different parts of the United States. During this period of service he spent much of his time becoming well acquainted in fruit sections in the Vir-

ginias and Tennessee. During the years 1903-4 he was connected with Long-Critchfield Corporation of Chicago, one of the largest agricultural advertising agencies in the United States. Ten years ago he moved to Spokane, the next year going to Wenatchee, where for one year he was connected with the commercial department as teacher in the high school; for two years and a half he was in the employ of the First National Bank of Wenatchee, then going to Klickitat County, on the Columbia River. The next year and a half he was employed in Klickitat County, spending part of his time in Hood River, Oregon, but instead of locating permanently as he originally intended, upon being offered the secretaryship of the Commercial Club of Wenatchee he returned to that city and for two years occupied the position of secretary and general manager. During the past two years Mr. Coburn has

been manager of the Wenatchee Valley Fruit Growers' Association, the oldest association in Wenatchee district. For several years Mr. W. T. Clark has been president of the Wenatchee Fruit Growers' Association. Mr. Coburn, as manager of the Wenatchee Valley Fruit Growers' Association, has spent much of his time in the East, where he had a splendid opportunity to inspect fruit on arrival and to study marketing conditions, having visited each one of the large marketing centers in the Middle West and East during the selling season. Mr. Coburn believes in co-operation between the



MR. G. W. COBURN
Manager of the Wenatchee Valley Fruit
Growers' Association

grower and the selling concern, and he advocated extending this co-operation from the growers' selling organization to the Eastern dealers. He believes the Eastern dealer should receive as great a per cent of profit on box apples as he receives on barrel apples, and that co-operation must extend along the line from the grower clear up to the consumer; and furthermore, he believes that if we expect people to sell our apples they must have an opportunity to make a fair profit and an equal profit with any other similar commodity.

Spokane Banks Prepare to Make Loan

Spokane, which is the big financial centre of the Inland Empire, has taken active steps through its banks and clearing house to perfect a plan to finance the fruit growers during the coming season. Plans are well under way which will probably culminate in the banks of Spokane being in a position to loan the fruit growers \$500,000 for the coming season.

YOU CAN EARN \$50.00 PER DAY with the
Gearless Improved Standard
Well Drilling Machine.
Drills through any formation.
Five years ahead of any other.
Has record of drilling 130 feet
and driving casing in 9 hours.
Another record where 70 feet was drilled on 2½ gal. distillate
at 9¢ per gal. One man can operate. Electrically equipped for
running nights. Fishing job. Engine ignition. Catalogue W.B.
REIERSON MACHINERY CO., Manfrs., Portland, Ore.



Northwest Grading Rules

Continued from page 16

all the way through the box. Boxes should be marked according to the number of rows across the end, as in nine row, ten row and eleven row. In making the box, top should be nailed on and cleated, bottom left off; box should be placed before packer with open bottom up. Carefully pack the bottom tier, which will be the top when pack is completed. In packing the first tier care should be taken by the packer to place the rounding side of the cherry next to the board. Use only the square pack, never a broken one. Both ends of box should be packed alike. Allow no stems to stick out of the corners, which will be the top of the box to the packer. See that the corners are well filled. After the box is nailed up there should be no stems showing. Edges of box where cherries are exposed should present a neat appearance. Nailers should be very careful when lidding up not to cut or mash any of the fruit; all such cherries should be removed and replaced with good fruit.

20-lb. or 25-lb. Boxes.—Follow same instructions when packing either 20-lb. or 25-lb. boxes as those given for 10-lb. boxes.

Lug Boxes.—We also recommend the use of a lug box with a center partition for cherries to be shipped to market, not exceeding over 200 miles from point of shipment. These cherries are placed loose in the box with no facing.

The dimensions of box are as follows: Sides, 18x5 $\frac{3}{4}$ inches; ends, 14x5 $\frac{3}{4}$ inches; tops and bottoms, 18x7 inches. The box to contain thirty pounds net weight of cherries.

Strawberry Crates.—It is recommended that for all cherries that are packed in strawberry crates use the

pint hallock, packed 24 to the crate. Where strawberry crates of 24-hallock carriers are used for packing cherries, hallocks should be well filled, shaken down and topped or faced so they will be rounding full. There should be no stems showing. Use square pack.

BERRIES

Of all Northern fruit, berries are the most delicate and highly perishable. Don't try to market them fresh unless you have concluded to exercise extreme care in every detail in preparing the fruit for market. For strawberries use deep standard pint cups, 24 in a crate. Use only dry crates and cups. For other berries use shallow standard pint cups, 24 in a crate where possible. Deep pints will answer, but there is more danger of loss from bad condition on arrival if deep cups are used.

As the fruit is packed to eat, the appearance of the package is important. Keep your crates clean and bright. When handling the crate after being filled, set them down gently; don't drop them and don't allow your help to drop them. After packing deliver berries promptly on wagons with easy springs.

Get the fruit under refrigeration at the earliest possible moment after picking. Pre-cool the cars as soon as possible after loading if a pre-cooling plant is available, otherwise use from 50 to 100 pounds of stock salt on the ice in each end of the cars after loading. Leave the vents open for first 100 miles when possible. Don't cool berries in a refrigerator or cold-storage room and then expose them to a warm temperature even for a short time, as the berries will "sweat" and mold. When you do cool them off keep the temperature uniform. It is best to cool them gradually in a cool, natural temperature in pure air.

Pick often enough to prevent berries from getting overripe. Daily picking, in favorable ripening weather, is the only safe rule.

STRAWBERRIES

Extra Fancy.—This grade shall consist of all perfect berries, Clark's Seedling variety, picked at the proper stage of ripening for shipping. All berries must show at least three-fourths red. Nothing smaller than 5 $\frac{1}{2}$ x5 $\frac{1}{2}$ (meaning berries not less than three-quarters of an inch in diameter) and no stemless berries in this grade. Pack each cup firmly, without bruising the fruit, so that there will be no settling of the berries. Face the top of the box with berries 16 (4x4) or 20 (4 $\frac{1}{2}$ x5) or 25 (5x5). Fill the cups so that the top layer will show three-eighths of an inch above the top of the cup.

Picking.—Berries must not be picked while there is moisture on the vines. Berries must be picked riper in cool weather than in warm. Pickers must not be allowed to hold several berries in the hand at the same time. Pick all berries with stems a quarter of an inch long. Berries pulled off the stem decay very quickly. Do not pick green ber-



ENGINE PRICES LOWER

200,000 customers testify to quality of Galloway-built goods. Our engines made in our factories. Modern design. Built for long, hard, continuous users' satisfaction. Don't buy until you investigate these heavy-weight, long stroke, large bore, low speeded, heavy duty engines. Engine book free. Wm. GALLOWAY CO., Box 1055, WATERLOO, IOWA.

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Monitor Engine

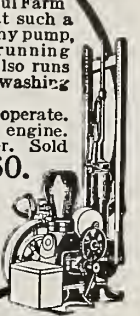
Now \$60!

The greatest, most powerful Farm Engine ever built to sell at such a price. Can be attached to any pump, furnishing abundance of running water for every purpose. Also runs cream separator, feed mill, washing machine, etc.

The "Monitor" costs little to operate. Fewer parts than any other engine. Nothing to get out of order. Sold under absolute guarantee. Price . \$60.

Send your name on a postcard for full particulars. Do it NOW.

R. M. Wade & Co.
344 Hawthorne Ave.
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Fruit Growers Profit by Dairying—

Hundreds of fruit growers are turning to dairying as the most profitable side line. Oregon's dairy products last year exceeded \$18,000,000.00.

Even if you have only a few cows, our Service Department can give you valuable ideas and assistance. We carry the most complete line of Dairy Supplies in the Northwest.—Sole Oregon agents for




**Simplex Separators
Buh Milk Cans
Entire Simplex Line
Papek Ensilage
Cutters**

Inspect our modern dairy equipment.

Free Catalogs

gladly sent upon request.

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The Simplex Line

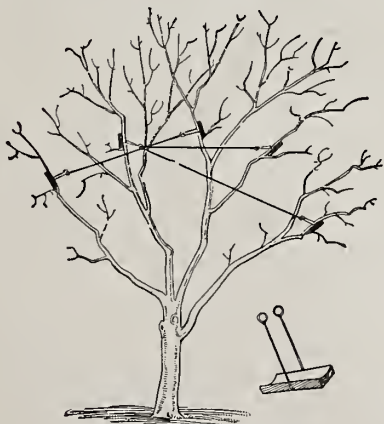
DAIRY, CHEESE AND CREAM FACTORY MACHINERY AND SUPPLIES

143 FRONT STREET PORTLAND, OREGON

ries; this is reckless waste. Do not step nor kneel on the vines or green berries.

Packing.—Study carefully specifications. Do not allow filled carriers to stand in the sun or wind; the wind is more damaging than the sun. The strawberry is probably our most delicate, most perishable fruit and must be

Tree Supports



WRITE FOR FOLDER

Thompson Mfg. Co.

Eighth and Santa Fe Ave.

Los Angeles, Cal.

YAKIMA FRUIT SELLERS

North Yakima, Washington

A Central Selling Agency for Yakima

EXCLUSIVE DISTRIBUTORS FOR

Yakima County Horticultural Union Yakima Fruit Growers' Exchange Richey & Gilbert Company

Our organizations handled 2,500 carloads of Yakima Fruit last season. Hundreds of growers have joined our movement and we already have under contract a much larger proportion of Yakima tonnage than ever before. Additional tonnage is coming to us daily. We have a large proportion of the fruit in the early districts—therefore we can load the early assorted cars—money-makers for the trade and the growers.

WRITE OR WIRE US IN SEASON

H. M. GILBERT, General Manager

FRED EBERLE, Asst. Manager

handled with the best of care from the time of picking until it reaches the consumer. Face each box with berries as uniform in size as possible. See that not more than 15 per cent of the berries under the facing are not smaller than the facing or in any way inferior. Berries brought in from the field by the picker must be emptied out by the packer on a sieve constructed of cloth to allow the sand and dust to fall away from them.

Hauling.—Haul only on wagons with good springs and keep the fruit covered with canvas to keep out the dust.

Marking of Crates.—The state law requires the grower's name and location where berries are grown on each and every case of fruit placed on the market. In the upper left-hand corner place the grower's name and address, and in the upper right-hand corner mark the words "Extra Fancy" on all berries of this grade.

RASPBERRIES, LOGANBERRIES, BLACKBERRIES

Pick raspberries and loganberries when a light pink and firm. Blackberries when dark red or black, but firm. Berries that were overlooked on previous picking which are overripe must be put in a separate box and must be used for local consumption or canning or drying.

Don't rehandle raspberries, loganberries or blackberries to sort them, as they are too delicate. The grading must be done by the pickers. The berries are sure to settle unless the cups are properly filled. See that the berries are settled, the corners of the cups are rounded up about five-eighths of an inch above the top before putting the cups into the crate.

Have your crate made five-eighths of an inch higher than the top of the upper layer of cups. If the top of the crate is too low, put a cleat under the cover. Don't mash the berries when putting the cover on. Mashing the tops of berries starts mold and seriously injures the appearance and quality of the berries when they reach the market.

If you do not have enough product to load ears daily, try and arrange with a neighboring district to join in loading ears.

If on account of bad weather or a shortage of help you are unable to pick your berries at the proper time, make the next picking clean and turn that picking into the cannery or dryer. This will give you a clean start for picking for shipment. A few overripe berries will start mold and ruin a whole box or an entire crate.

The range of markets extends to Vancouver, B. C., Winnipeg, Duluth, Minneapolis, Chicago, Omaha and Kansas City, and the fruit must be packed and loaded so it will reach these markets in good condition. By complying with these instructions a standard will be established whereby buyers can safely order cars of berries from us at an f.o.b. price which will otherwise be impossible. All kinds of picnics or gatherings of people engaged in harvesting season should be discouraged.

Phosphorus Makes Fruit

Ground Phosphate Rock is the most economical and profitable and only natural form of Phosphorus to use in systems of Permanent Horticulture and Agriculture, and when properly applied restores Fertility to worn out soils and Maintains and Increases the Fertility of good soils.

Write for our literature.

United States Phosphate Co.

405 Marsh-Strong Bldg., LOS ANGELES, CAL.

Our mines are located in Utah, Idaho and Wyoming.

LOW Round Trip FARES

to the

California Expositions

and

To the Principal Cities of the EAST

via the

Columbia River Route

UNION PACIFIC SYSTEM

or you may add an "EXPOSITIONS" visit to your Eastern trip at small additional cost.

Tickets on sale daily to September 30; going and return limit, October 31, 1915.

Fares, reservations and full information upon application to any agent of the Union Pacific System (O-W. R. & N. Co.) or upon request to the

GENERAL PASSENGER AGENT
PORTLAND, OREGON





Trade Mark

Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

Largest and most progressive growers have rendered the verdict

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength is assured with

"CORONA DRY"
Arsenate of Lead
Patented June 30, 1913
The "Standard" for Convenience, Economy, Efficiency

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for. Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency.

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

CORONA CHEMICAL CO., Dept. E, Milwaukee, Wisconsin

MANUFACTURERS OF

Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, Etc.

Distributing Agents { Boston, Mass.—Joseph Breck & Sons Corporation
Philadelphia, Pa.—Pittsburg Plate Glass Co.

Memphis, Tenn.—Hessig-Ellis Drug Co.
New Orleans, La.—Finlay-Dicks & Co.

Spokane, Wash.—Spokane Seed Co.
Portland, Ore.—Portland Seed Co.

Northwestern Sales Agents Portland Seed Co., Portland, Oregon Catalogues and prices on request

Description of An Evaporator

By D. W. Seely, Sodus Point, New York.

THIS article is written for the benefit of orchardists, fruitgrowers and others who may be interested in evaporated apples. The time is here when every large fruitgrower or co-operative orchard company or small grower should have an evaporator, vinegar plant or some means of disposing of the lower grades of apples which now go to waste in many of the apple-growing sections of the United States and Canada, which if evaporated would add materially to the net profits of the orchard.

For the benefit of people who have never seen an evaporator, large or small, I am going to describe what you might call a unit-size dryer; by this I mean one of from 50 to 100 bushels daily capacity; and it is this size that makes the finest stock, and there are hundreds of them in this county (Wayne) and in the vicinity of Sodus, New York, one can see a dozen in about any direction you may look, and here is where all the best grades of evaporated stock is made and it is these small dryers that make it. They are mostly frame buildings two stories high, and we will say 16-foot posts and maybe 16x32 or 18x36, yet they may

vary in height, also in other dimensions, and in fact may be some old building converted over into a dryer, so do not think you have got to follow out these dimensions, as there is no fixed rule to go by in building, operating or equipping a dryer; a good liberal dose of common sense is the prime factor in the business. I am describing one that was built last fall and is a fair sample of one where it is built new throughout.

The building is 16x32, set on cedar posts set well in the ground, the sill being about a foot above the ground and the drying or kiln floor, as we call it, should be about 11 feet from the ground; the joists should be 2x8 and 16-inch centers; the kiln flooring is maple; they are cut triangular about one and a quarter inches on an edge with one edge cut off so it is about a half-inch wide so it will not roll over when nailed to joists, and they should be laid about a quarter of an inch apart. Cost of this flooring is about 5 cents per foot; all prices are based on New York prices. Now comes the furnace used in drying the fruit. Never buy a small furnace, as it is better to have one twice your capacity than one

you have got to force all the time to get the heat; it will consume enough more fuel in a season to more than pay the difference in price, and besides it is no time to get stuck when the drying season is here and you have to lay off help to get caught up with the drying. Use, if possible, a steel-dome furnace—the larger the better. Avoid a heavy cast-iron dome furnace, as it consumes too much fuel, and the castings being heavy it is hard to get the heat through them; while sheet steel, being thin, gives off the heat very fast. This furnace should have two holes in the top, nine or ten inches in diameter, and should be connected to the chimney with three or four coils of pipe of same size running horizontally under the kiln floor and distributed about an even distance apart under the kiln floor and from one and a half to three feet below it. Both smoke pipes should join in a T at the chimney and have a damper on each side. Chimney in this case is set on the inside of the work room, but is flush with the inside of the furnace room. This chimney answers for draft for the bleacher and stove, if one is required. Chimney should not be less than 12 inches square inside and

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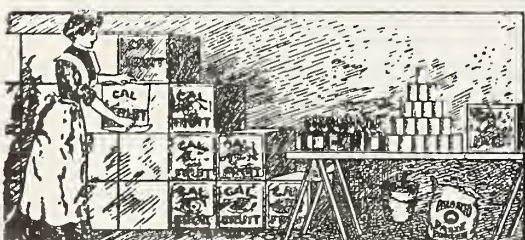
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may start from the ground or be built on a bracket. Now comes the cold-air drafts, which are placed in the four sides of the furnace room and as near the ground as possible; this is to give the furnace air as well as allowing the moisture to pass off from the drying apples. The area of the four holes should be about 10 per cent of the area of the kiln floor and the area of the ventilator in the roof at least 15 per cent of floor area. There is no fixed shape for a ventilator so long as you get the opening large enough. Cost of large furnace about \$50, and cost of three coils of ten-inch pipe is \$30, made from best grade refined iron.

Understand this plant is a hand-power plant throughout and will not cost near as much as a power plant of same capacity. This plant ran about eighty days last fall and dried about 6,500 bushels. It is equipped with two hand-power machines that costs \$10 or \$11 each, and a hand-feed rotary slicer that costs about \$15. Three women were employed to trim the apples; one machine run full time and the other about half time, by the owner, and balance of his time was taken up with other work about the dryer, such as turning apples on kiln, getting in peeling apples, keeping floor clean as possible, slicing the bleached apples and keeping close watch of the furnaces. About 60 bushels can be pared on one of these machines and two average good trimmers will trim them. The third woman in this case trims the apples from the second machine; therefore I might call it a machine and a half dryer and run out about 80 or 85 bushels per day. Now these women were paid \$1 for nine hours' work and the man or boy who peeled steady about \$1.75 or \$2 per day. This is about all the help required when apples are delivered to the dryer and no night man is employed, so you see he has a help expense of \$5, not figuring his time, which we will figure at \$3, as he puts in long hours. This makes \$8 without fuel cost and machine repairs, which is not much in this case; but about \$2 more is about right. That will bring the drying price per bushel about 12 or 13 cents. Now most of these apples were bought at 35 or 40 cents per hundred pounds, delivered. Now it has cost about 33 cents to buy the stock and dry it; the average selling price of this fruit last fall, which was not a good year for the dry-house man by any means, was 6¼ cents per pound, and as they were mostly Baldwins, I think he made them go 7 pounds per bushel, which is really heavier than they ought to be made; that makes 47 cents for the white fruit. now there will be about four or five pounds of waste, which sold for a cent a pound, which is rather cheap. Therefore you can see his bushel of apples bring in about 57 cents, less cost of production, giving the dryer 24 cents profit per bushel, but it will take experienced help to do this amount daily. Probably one-half this would be fair for all new beginners, but in a week or

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Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are then tougher, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or on 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

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so you will come nearer the amount mentioned. Many dried apples sold as low as 4¼ cents, but these were what we grade as choice; and some grades brought more, such as picked fruit without the barrel fruit removed.

Now, describing the work room, which is on a level with the kiln floor and is the same size (but ought to be larger). The paring table is about three feet wide and five or six long, and is set upon a platform about eighteen inches high to give a pitch sufficient to allow the trimmed fruit to run down in the bleacher, which is set at the end of the trimming table and is connected by a spout which runs down through the table. In this case the bleacher is nothing more or less than a box about five feet square and about as high, with a tight vertical partition in the middle and a slat floor made of the same kiln slats, and the lower edge of the floor is only high enough to let a crate under when you want to draw the apples out after they are bleached, which is about 45 to 60 minutes, depending somewhat on the maturity of the apples. In fact you should not dry any fruit that is not matured, as it hurts the market and is liable to sour, no matter how dry it is made. The pitch of this bottom is about the same as the spout in the table. The brimstone is placed under the slat floor, using first one side of the bleacher, then the other. While you are filling one side, slice and put on the kiln floor as fast as sliced if the kiln floor is empty; if not leave them in crates until your floor is empty. Do not slice and leave them for half a day before putting them on the kiln, as they will leach and not make as good fruit. The draft pipes to this bleacher are connected to the chimney, and each one should be a six or seven-inch pipe, and there should be two of them, as this is virtually two bleachers in one.

Any metal basin of pint capacity may be used for a bleach cup and you must be careful of fire, as here is where many fires start from. There would be about fifty bushels of slices from the day's work. These would cover three-fourths of the floor four or five inches deep. They should be handled carefully so as not to break any of the perfect slices. They should be as level as you can make them, and if you have your kiln piped right they ought to dry pretty evenly, but if it doesn't you will have to load heavy or light in some spots, as the case may be, and you will soon learn how to gauge your spreading on the kiln. The balance of the floor is used for waste, which consists of skins, cores and trimmings, and they should be well shook up with a fork so as to lay as loose as possible to permit of free circulation. Never step on any white stock or waste while drying. The floor should be washed at least once a week and oftener if it needs it. It should have two or three coats of raw linseed oil before you do any drying on it, and hot tallow is used in greasing it after that. Always keep a clean pair of rubbers near the door

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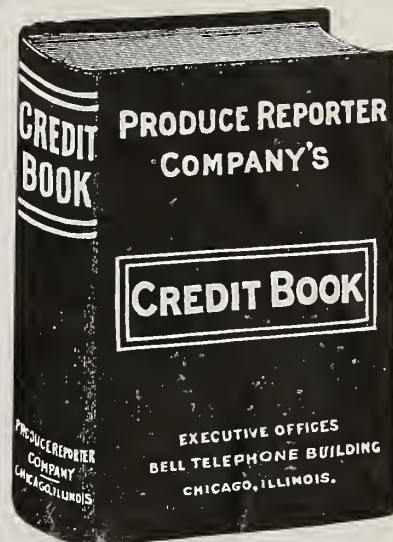
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You can satisfactorily answer this important question with the aid of PRODUCE REPORTER SERVICE.

The CREDIT BOOK guides you to reliable, responsible buyers—points out the "tricky" and "unfair" dealers—gives the summarized experiences of other shippers with every firm in every market. It is used today by the great majority of successful fruit and produce handlers.

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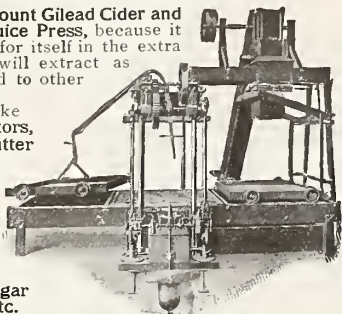
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California is this year holding two great universal Expositions, one at San Francisco and the other at San Diego, in celebration of the completion of the Panama Canal and the joining of the Atlantic and Pacific Oceans. These two Expositions represent an expenditure exceeding one hundred million dollars. To supply the demand for reliable and authentic information on these Expositions and California, we have published two beautiful books; one on San Francisco, the Exposition and Northern California; the other on Los Angeles, San Diego, the Exposition and Southern California; also a lithographed view of San Francisco in colors (size 30x45 inches), a picture of the rebuilt city, including the Exposition. Each book is 6x9 inches, contains nearly 200 pages and many beautiful illustrations.

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and put them on when working in the kiln in any way.

Now we will suppose the day's work is done and apples are on the kiln and you have a good fire, that is, your furnace is red hot and your cold-air drafts about half open. Keep it this way until you wish to retire, or about nine o'clock, when you can open the rest of the cold air and check the furnace for the night; and it would be best for you to stay up a few nights until you learn how to regulate your furnace. You must not have too much heat or they will dry so they will stick fast to each other; also to the floor. In the morning they should be thoroughly wilted when you go to the dryer, which should be as soon as you get up. Now they want turning, which is done with a snow shovel. Start by shoveling a path across the floor, throwing the apples well across to the other side, then start and fill in the path, keeping them smooth and level. Do the same with the waste; finally back out the door and you will not have stepped on any fruit. It will take about twenty to thirty minutes to turn the kiln, and it should be turned again about noon. This should be enough and they should be ready to come off the kiln anywhere from two to four o'clock. In this dryer the lower story is used for the storage of dried stock; it is shoved off the kiln down a spout that discharges on this lower floor. This leaves a pile of warm apples, and they should be spread out to get the kiln heat out of them. They should be shoveled over every day for four or five days, when they will be in good condition and have a spongy feeling, and when squeezed up in the hand will spring back and not remain soggy. Keep each day's drying by itself until cured, then you may put them on the cured stock, which is now ready for the market. Here we have dealers in every town who make it a business to buy these goods, and they are delivered about as fast as a ton is ready, so you see we have a quick market and very little capital is required, but you who have no home market will have to look to some wholesale grocery house, commission man or broker. As this business grows in a locality someone will make it a business to buy this stock and in time you will have a home market same as we have. Never carry any dried apples over from one season to another, as they will not keep outside of a chemical storage. Sell your goods when they are ready for the market, for you cannot afford to speculate, as it takes lots of money as well as lots of brains.

From these descriptions any man ought to be able to build and operate a dryer and make good wages and a fair profit for the dryer. Now don't think because a unit-size dryer will give you a profit of ten or fifteen dollars per machine that if you build one with fifty-machine capacity you would make fifty times as much, for you would go bankrupt the first season.

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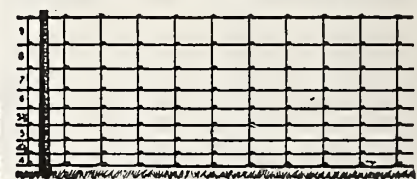
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BOOK ON DOG DISEASES

And How to Feed

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H. CLAY GLOVER, V. S.
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Beware of any firm or individual that says build a big power plant and see the money roll in—big money in evaporating apples, etc. Better get rich in a slower and surer way; best to start on a small scale, get experience and grow with the business. The market will never be glutted with high-grade evaporated apples. If you wish to build a little larger dryer, don't build more than four kilns in one plant. I have kept a close watch on all these big dryers and I know pretty well what will happen inside of three years. Do not get in over \$3,500. The trouble with a large plant is you have to have such a large stock of apples that the waste by decay will eat up your profits. The dryer here described can be set on a side hill and the work room on the ground floor. This will eliminate a lot of hard work in carrying peeling apples up stairs.

There has been about 600 carloads of evaporated apples carried over from last year. This represents about one-third or one-fourth the output, and were bought at about five cents, and it costs a half cent to carry them over and another half for boxing, so you see they stand the speculators six cents without a profit; and with not any too good a crop in prospect this year we can look for a pretty fair price for good stock, but I will not make any prediction on price for the public. I have given you the straight facts in this line as from my experience. I think I am quite able to do so, and I have not overdrawn this in any way. If any man will use good business sense there is no reason why he cannot succeed in this business, but it's all work, and it's no get-rich-quick business either. If people do not fully understand or there are other things they wish to know and will write me, I will put all together in an addition to this next winter, and will be sent to you for the asking.

Explanation of Government Crop Reports

[L. M. Eastbrook, in The Packer]

THE methods employed by the United States Department of Agriculture in estimating the production of the various crops of the country, were explained by L. M. Estabrook of the Bureau of Crop Estimates in an address to the members of the Eastern Fruit Growers' Association. The address was both a defence of the bureau, which often has been criticised for either overestimating or underestimating a crop, as well as an explanation of the work involved. The government began making crop estimates as early as 1839, with an appropriation of only \$1,000, but the machinery of the bureau now has grown until no less than 145,000 voluntary crop reporters are employed, as well as those employees drawing regular salaries, and an expense of \$275,000 annually. Estimates are made on over 50 different crops. These crop reporters are subdivided into districts

Pacific Coast Agents
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If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

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Write or wire for information.

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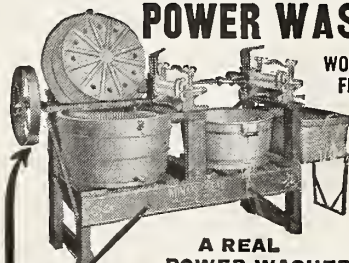


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Full information from nearest Agent of

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John M. Scott, General Passenger Agent, Portland, Ore.

usually represented by the various county and township boundaries, so that practically every township in the United States has its crop reporter. These men make reports each month of the year, with the exception of February. The individual estimates are tabulated and an average struck for each state. Great care is taken by the government that no information about its crop estimates be given out in advance and a heavy penalty is prescribed for anyone guilty of doing so. Clerks and computers who tabulate the returns on speculative crops do not know the state to which the totals pertain.

The term "normal" is used by the government instead of "average" as better illustrating the meaning intended, as the "normal" corresponds with what is commonly called a "full crop," which may be understood as meaning the average good crop which the farmer expects his particular field to grow, with average or normal growing conditions. However, for a single year the condition of a crop expressed as "normal" would not mean anything, but when compared for a long series of years it enables the government to estimate very closely what the prospective yield will be. Mr. Estabrook does not claim that these crop estimates are infallible, and admitted their accuracy cannot be demonstrated. However, he pointed out that growers as a rule contend that the estimates are too high, while dealers on the other hand complain that they often are too low. The work is done without bias and is checked up in every way possible to prove its accuracy. In showing the accuracy of the government's crop estimates, Mr. Estabrook cited the case of Colton. In fourteen years the government has overestimated the crop six times and underestimated it eight times. In the years of overestimates the average error was 1.8 per cent and in the years of underestimates the average was 3.5 per cent. For the fourteen years the net average underestimates was 1.4 per cent. Mr. Estabrook said: "It may be of interest to know how the apple crop is estimated where, to start with, we do not have a census acreage as a basis. In the first place, the census gives us what purports to be an actual enumeration of trees of bearing and trees of non-bearing ages. Also the number of bushels of apples produced in the census year. These figures are given as totals for each county and state.

"Once a year, usually in the autumn, our crop reporters submit an estimate of the number of trees of bearing age and the number of trees of non-bearing age, as compared with the preceding year and as compared with the usual number. This enables the bureau to estimate the rate at which the number of bearing trees is increasing or decreasing in each state. From the best information available it is estimated that trees of bearing age are increasing at the rate of one per cent annually in the whole United States.

"Then, beginning with June, a monthly estimate is made of the condition of the apple crop as a percentage of normal. These condition reports have been made to the department for the past quarter of a century or more. Last year for the first time the bureau interpreted its condition reports as a forecast of production, beginning with August and ending with November. These forecasts or estimates of production are based on the census. For instance, our system of reporting condition as a percentage of normal has remained practically the same since the work was started, so that the figures for each year are strictly comparable with those of any other year. The production in census years is known for each state. The monthly condition figures and the percentage of a full crop as estimated by this bureau are also known for the census years. If, therefore, at the close of the season the crop in 1909 was estimated to be 43.8 per cent a full crop, and the total production for the United States as reported by the census for that year was 146,000,000 bushels, the full crop represented by 100 per cent would equal 333,000,000 bushels. In the same manner the normal or full crop production of each state is computed. Of course the normal or full crop production of each state is changing constantly because old orchards are dying out and new ones are being planted. These facts are taken into consideration in fixing the state normal each year. Knowing the normal or full crop for any state, it is a simple matter to forecast the prospective yield from the monthly estimates of condition.

"The bureau has a number of checks for use in its system of estimating. Among the most useful are series of tables showing ten-year averages of condition reports by months, numbers of bearing and non-bearing trees, yields and prices. Practically all of these ten-year average tables of condition reports show a relatively high condition at the beginning of the season and a relatively low condition at the close of the season, showing that the condition as a percentage of normal steadily and regularly declines from month to month. The point I wish to make is that if we have a condition report near the close of the season which is higher than the ten-year average of condition reports for the same month, it may indicate a greater yield than a higher condition report earlier in the season. This is exactly what happened with apples in 1914. The season was so favorable to apples that the monthly condition reports remained nearly the same throughout the year, in some cases actually becoming higher as the season advanced, while in other cases the decline in condition was less than the ten-year average decline. Take New York as an example: In June the condition was estimated at 88 per cent of normal, which was 4 per cent higher than the ten-year average for that month; July it was 75 per cent, a de-

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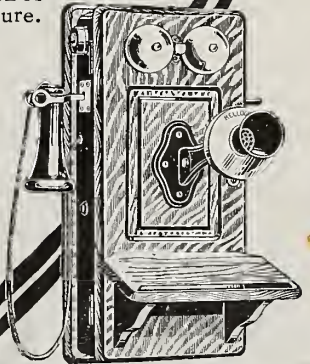
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cline of 13 per cent from June, but still 4 per cent better than the ten-year average; August 69 per cent, a fall of 6 per cent, but 9 per cent better than the ten-year average; September 73 per cent, an advance of 4 per cent from the previous month instead of a decline, and 19 per cent better than the ten-year average; October 79 per cent, a further advance of 6 per cent over the previous month instead of a normal decline, and 24 per cent better than the ten-year average; November 84 per cent, which was an increase of 5 per cent over the previous month and 31 per cent above the ten-year average. Thus, while the condition of the apple crop in New York started in June at 88 per cent of normal and ended in November at 84 per cent, a net decline of four points, yet if compared with the ten-year average it started in June at 104.8 per cent and ended in November at 158.5

per cent. The equivalent of a full crop or 100 per cent production in New York is estimated at 59,100,000 bushels. Taking 84 per cent of this, the percentage of a full crop indicated by the November report, the estimated production in 1914 was 49,600,000 bushels.

"For the United States as a whole the condition of the apple crop was estimated in June to be 73.7 per cent normal, and in November as 74.5, an increase of nearly 1 per cent instead of a normal ten-year average decline from 66.5 per cent to 51.3 per cent. Expressed as a percentage of the ten-year average the condition of the apple crop for the United States in June was 110.8 per cent, July 108.1, August 112.9 per cent, September 115.5 per cent, October 130.1, and November 145.2.

"Another fact which should be borne in mind with respect to the bureau estimates of the apple crop is that they are estimates of total production on all farms in the United States as distinguished from estimates of the commercial crop. The commercial crop is that portion of the total crop which is shipped out of the counties where grown. In November, 1913, the bureau estimated this movement for the first time and the inquiry was repeated in 1914. In 1913 it appeared that 41 per cent of the total apple crop was shipped out of the counties where grown and 59 per cent was consumed on the farms or within the counties. On this basis the 1913 commercial crop was about 59,000,000 bushels and the crop for home consumption was about 86,000,000 bushels. On a per capita basis, assuming roughly that the population of the United States is approximately 100,000,000 and that 65,000,000 are living in cities and 35,000,000 on farms, it would seem that in 1913 the per capita consumption of apples in cities was about nine-tenths of a bushel, while on farms it was 2.4 bushels. Our estimates for November, 1914, indicate that the commercial crop was 38 per cent of the total and that 62 per cent was consumed or remained in the counties where grown. This would give us a per capita consumption in cities of one and one-half bushels and in the country four and one-half bushels. Of course such an estimate of per capita consumption is not strictly accurate because a portion of the crop is consumed in cities and towns in the counties where raised. But these estimates of per capita consumption are partly confirmed by a special investigation which was made in 1914 by the Bureau of Plant Industry on the subject of 'What the Farm Contributes Directly to the Farmer's Living,' and published in Farmers' Bulletin No. 635. This shows the per capita consumption of apples on farms as ranging from one to five bushels, with an average of 3.1 bushels."

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Apples and Health

Elbert Hubbard in the Chicago Examiner

A DOCTOR'S bill doesn't always have to be paid at once. Apples are generally bought for cash. But in the long run apples are much cheaper than medical service. The old maxim still holds, "An apple a day keeps the doctor away." As a race we have never had enough fruit. We have lived too much on meat and white flour. Any doctor will tell you that there are a hundred diseases that would absolutely disappear if we would adopt a fruit diet, say for one meal a day. Apples agree with everyone. Apples tend to modify the demands of the Meat Trust, increase the flow of bile, and their plentiful use will add to our happiness and length of days by eliminating the dregs of much pessimistic theology that yet clogs our social system.

In apple season, when you saunter through an American orchard and see a pile of Nature's Health Nuggets, you think of a painting by Turner. Old Sol has dipped into Mother Earth's palette and colored them with gold, russet and vermilion drawn out of the soil, and then flavored them with an Elysian essence. Later, man learned to co-operate by spraying the trees, irrigating, plowing and leveling the soil. And it came to pass that the world learned that art in apple culture paid. The apple growers of California, Oregon, Washington and Colorado were the orchard teachers of this country. They made the farmers of the East realize that apples might well be taken seriously—that they were not a sort of garden truck. The Hood River Valley apples have attained an international reputation. This Hood River Valley is one of the most picturesque and beautiful spots one can imagine. The cool nights and the warm sunshine of the days seem to contribute exactly the right conditions for apple culture. However, there are many other districts that can produce just as good fruit as the Hood River Valley, provided the same amount of genius is brought to bear. I admire the Hood River Valley apples, but I admire the Hood River people more. They have brought genius to bear in the business of apple culture and apple salesmanship. They know how to prepare their wares for the market in the most attractive shape.

Many American apples command a price in England. I have paid a shilling for an American apple and had it brought in on a silver platter with the original wrapper upon it, duly served by a flunky in side whiskers, who expected a tip for his genius in selection. And, really, I was a little proud of the fact that people in America occasionally do their work so superbly well. And, as the years go by, apple culture will receive a degree of attention that it has never had before. Fruits, vegetables and poultry are now being regarded just as important as corn, wheat and oats, and perhaps a little more so.

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Arcadia Orchards Company
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Prospects for Short Apple Crop in the Northwest

The Northwestern apple crop this year will fall short of the 1914 output, which was approximately 14,000 cars. This is indicated by the similarity of reports coming to the Northwestern Fruit Exchange from the various producing districts. They state that the bloom on the old trees is much less than last year, but that trees coming into bearing will have considerable counteracting effect.

The Yakima district was the heaviest contributor to Northwestern tonnage in 1914, with nearly 6,000 carloads, but the consensus of opinion now is that it will ship only 60 per cent of that tonnage this year. Many of the old trees will carry but 25 to 40 per cent of their last load if the bloom is a true indicator. Even with new orchards coming into bearing, it is not safe to estimate above 4,000 carloads for 1915.

Wenatchee shipped 5,570 carloads of apples during the season just closed. Its old trees show indisposition to bear heavily, but not so much so as at Yakima. Many new orchards, will bear their first substantial crop, especially in the section of the north called the up-river country, where it is estimated that 400 cars will be rolled, as compared with 150 last season.

Jonathans are short at both Yakima and Wenatchee, although the same trees bore a light crop last year. Winesaps will be heavy again.

The same story comes from Hood River. Its shipments for 1914 were close to 1,200 cars, and it will not have any more in 1915.

Spokane reports a shortage and estimates less than 400 cars.

Rogue River Valley of Southern Oregon had a very light crop in 1914 on account of drouth, and it is now feared that there will be another shortage of water and crop. The present normal prospect is for 1,200 cars, consisting of 700 of pears and 500 of apples. However, unless weather conditions are favorable, this estimate will fall short of realization.

There are still many things that can happen to cut down the crop, but very little to increase the above estimates. Hundreds of growers in some districts are fighting frosts nightly, although this danger is now nearly past. In some sections the battle with blight is serious and the issue problematic. There will be more or less June drop. Wind and hail storms may come to any or all districts during the summer.

Several of the less important districts will have increased tonnage, but this is more than offset by the shortage in other sections.

No fruitgrower's home should be without a water system, with hot and cold-water attachments, in the kitchen, bath and laundry room. No woman should be compelled to carry water from a well when it can be pumped into the house with very little expense.

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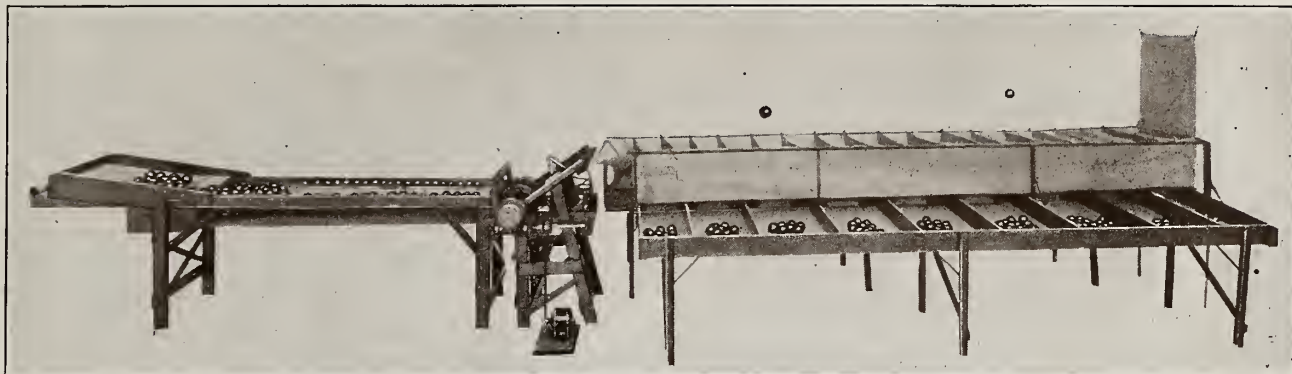
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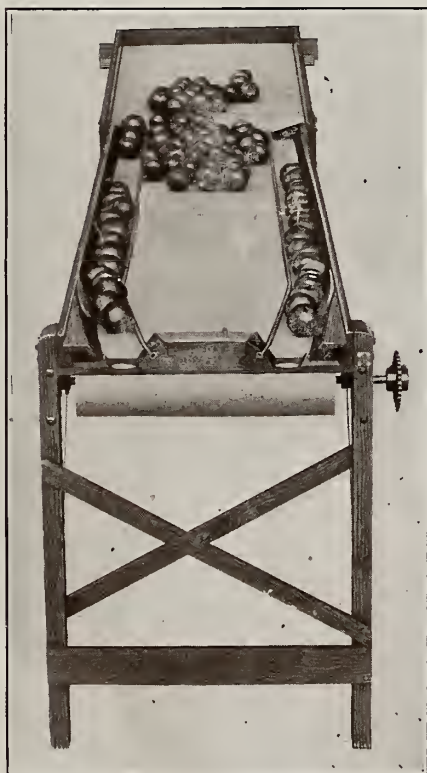
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We have just finished the packing season and have packed about 18,000 boxes of apples. Our grading cost us about 1 cent a box and our packing 3½ cents, making the total cost about 4½ cents for packing and grading.

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WEISER RIVER FRUIT ASSOCIATION,
Weiser River, Idaho.

In the capacity of warehouse foreman for Lynch-Taylor Produce Company, where we used one of your machines, it places me in a position to state what the machine can do. We paid 4 cents for packing, and our grading, packing and sizing cost us from 5½ to 6 cents per box. In addition to that saving we have a much better pack and a considerable saving in wrapping paper. This last item I have not figured in the above saving.

We have packed every variety of apple and pear and find that there is absolutely no bruising.

Packers on our machine average from 85 to 150 boxes per day. I wouldn't go back to the old system again for a farm. H. G. BULLOCK,
Warehouse Foreman for Lynch-Taylor Produce Co.

I packed about 20,000 boxes of apples, consisting of Jonathans, Spitz, Stayman, Rome Beauty and Arkansas Black. My packing, grading and sizing cost me 5½ cents per box, and I got a much better grade of pack than I was ever able to get from the old hand-sizing methods. I saved ½ cent a box by using the proper sized paper on the different apples.

There is absolutely no bruising of the fruit with this machine. I have sized apples quite wet when run through the machine and found them dry when they came to the packers.

I take pleasure in recommending this machine to any man who has a small or large amount to pack.

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I can heartily recommend the machine to every fruit grower. MRS. JOHN H. ESTES.

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This machine will be demonstrated every day except Sundays during the year at the Panama-Pacific International Exposition in the Palace of Horticulture, by our California State Agent.

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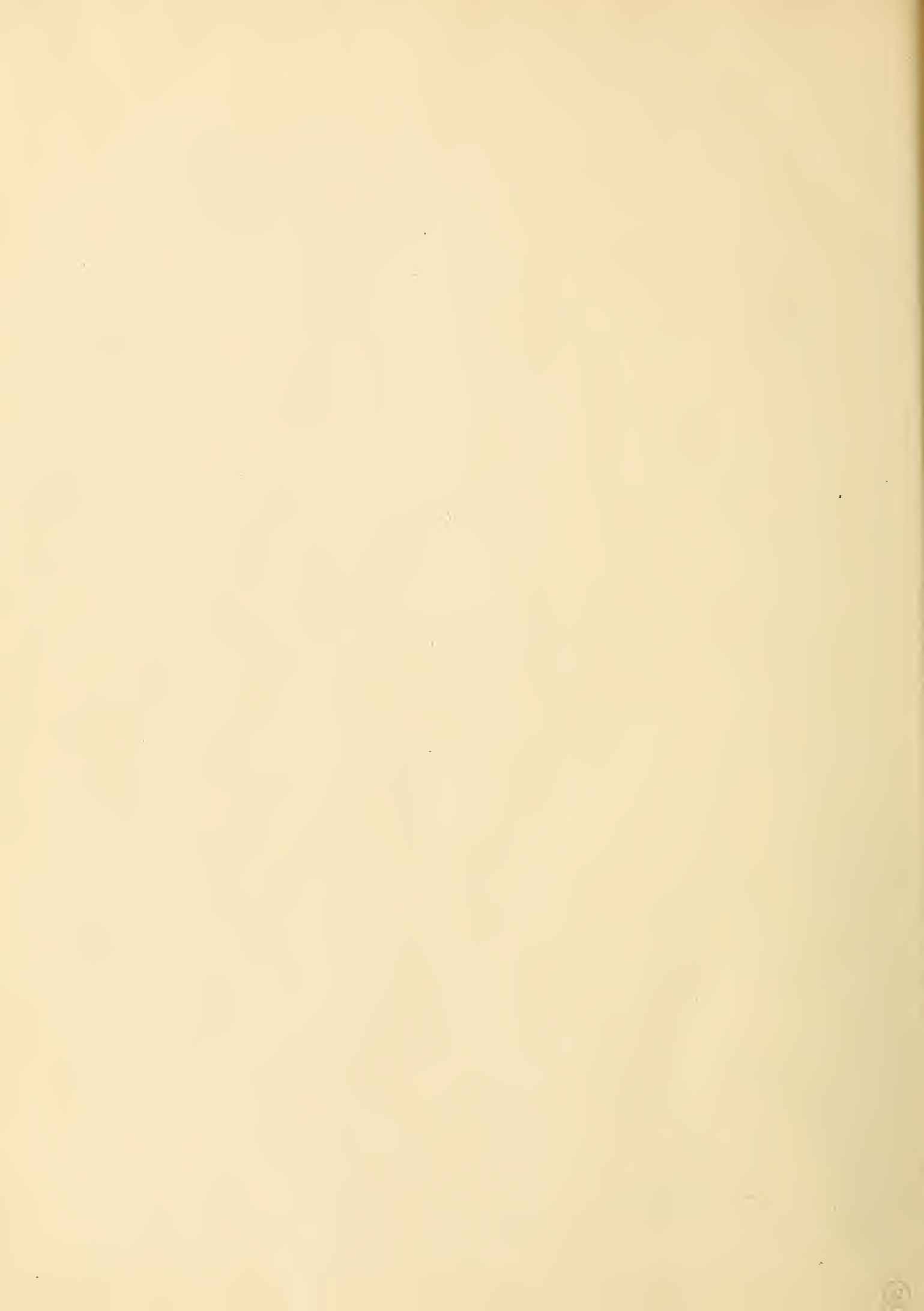
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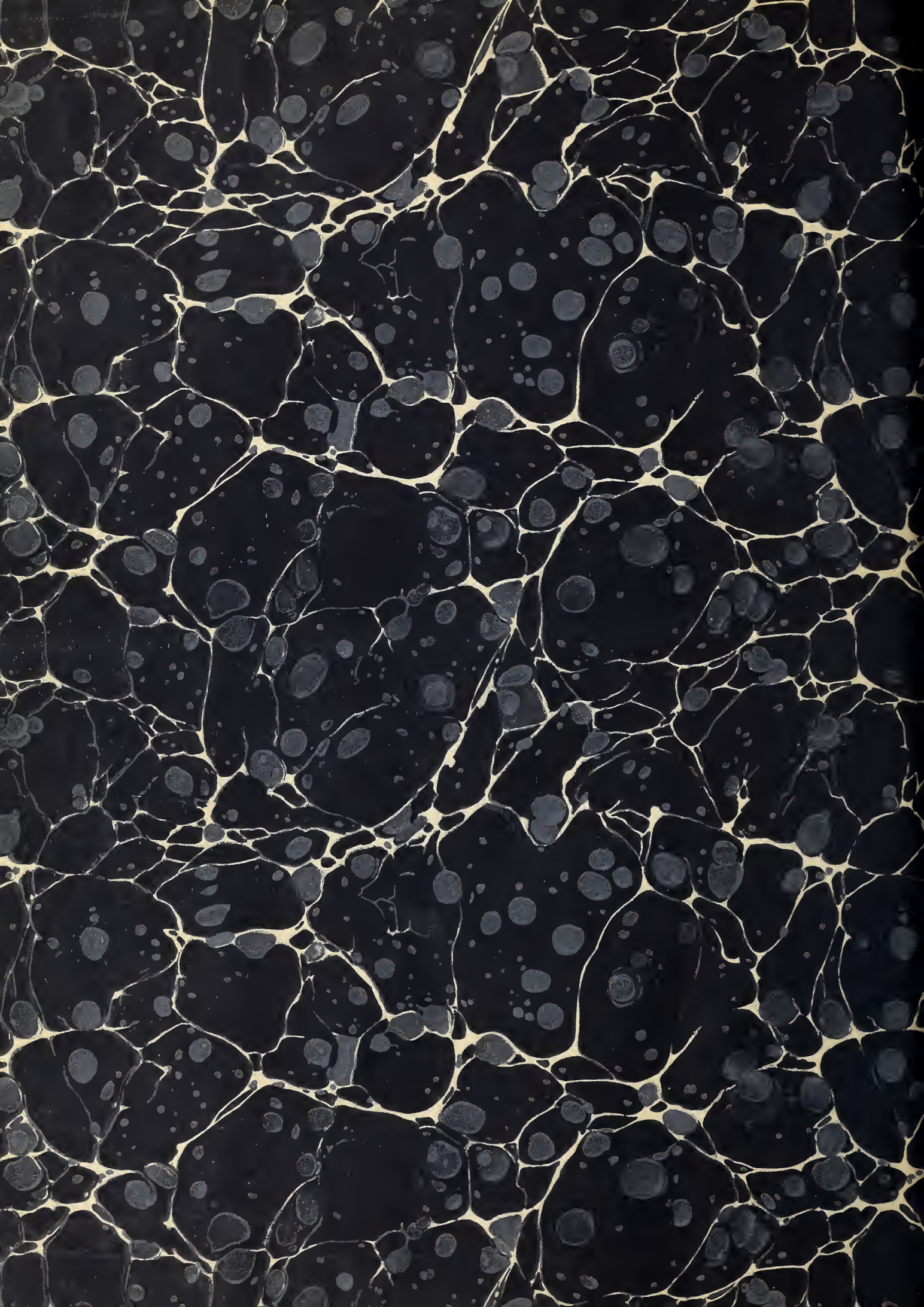
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